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# CHAPTER 1 INTRODUCTIONS

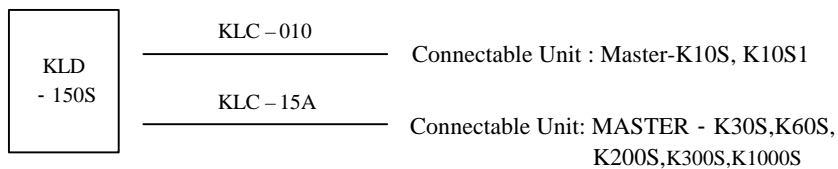
## 1.1 Features

Handy Loader, KLD-150S is a commonly used programming tool for MASTER-K series PLC. It has various features such as program editing/monitoring, special functions and mode setting (PGM, Pause, Run, Debug).

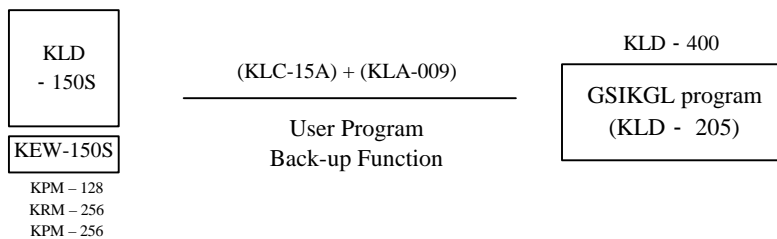
- 1) 4 Mode Operation
  - Program Mode
  - Run Mode
  - Debug Mode
  - Pause Mode
- 2) Monitoring
- 3) EPROM Writer Functions
  - Reading from EPROM
  - Writing to EPROM
  - Confirming of EPROM Clear
  - Comparing EPROMs
- 4) LCD Back Light On/Off Function

## 1.2 Handling Precautions

- 1) Connection to MK series

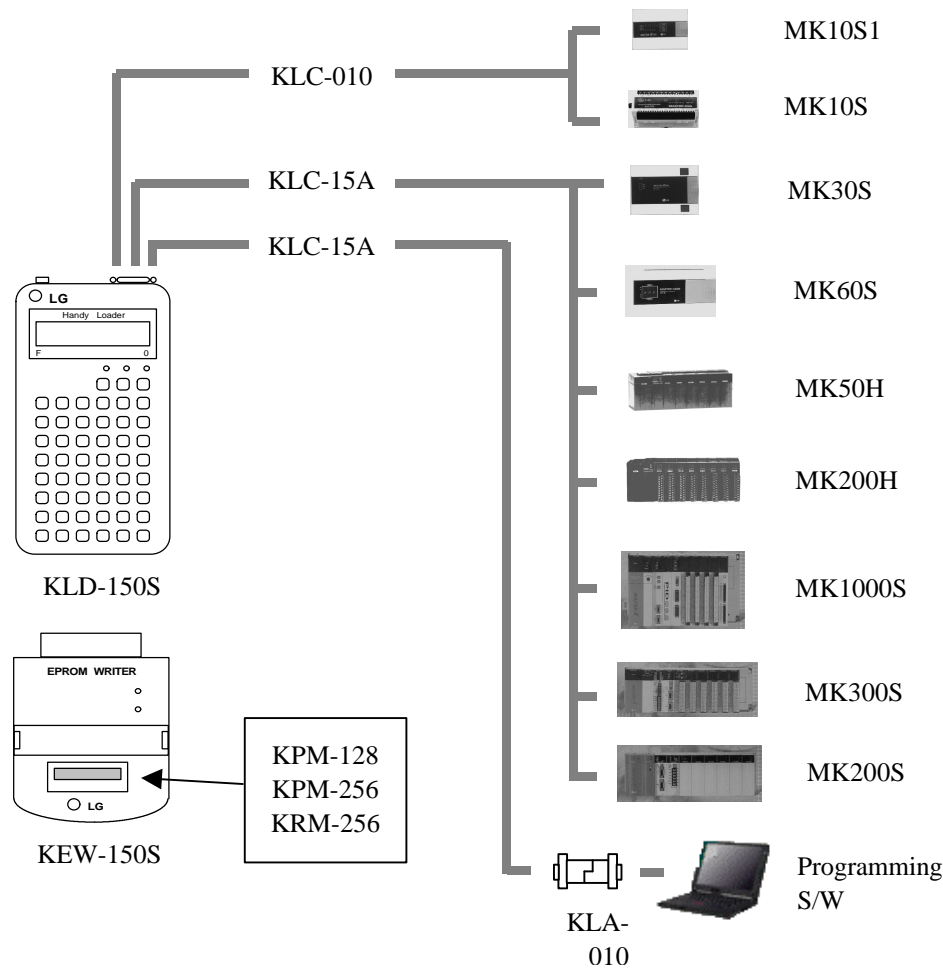


- 2) Program back-up using KLD-400 graphic loader



CHAPTER 2 CONFIGURATION AND PRODUCT LIST

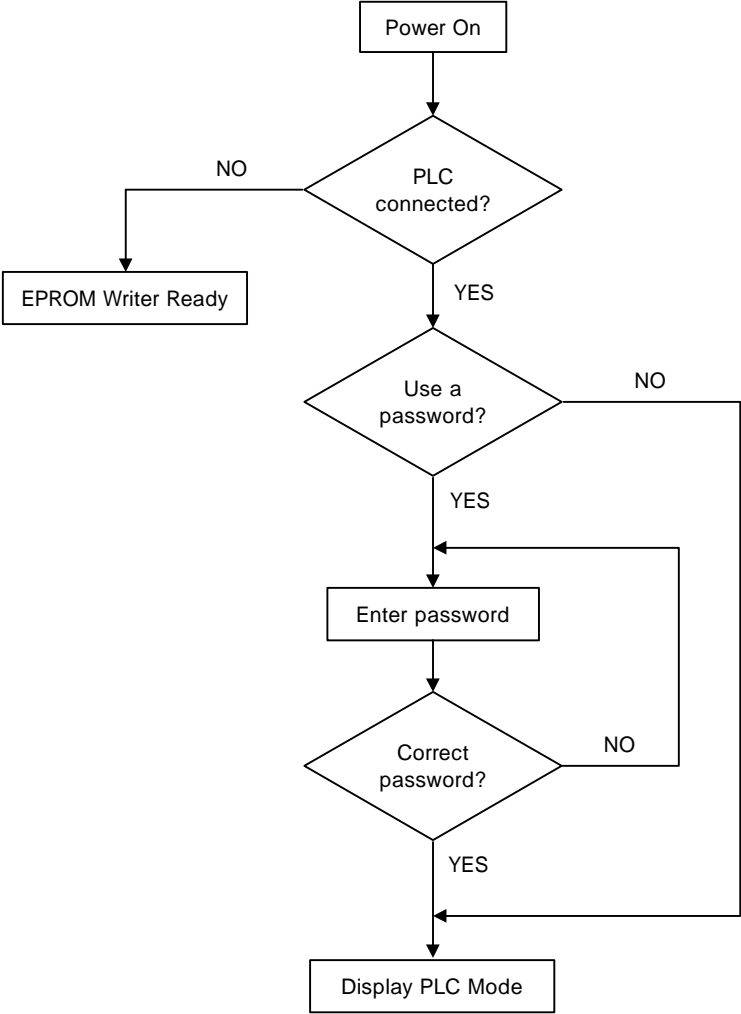
2.1 System Configuration



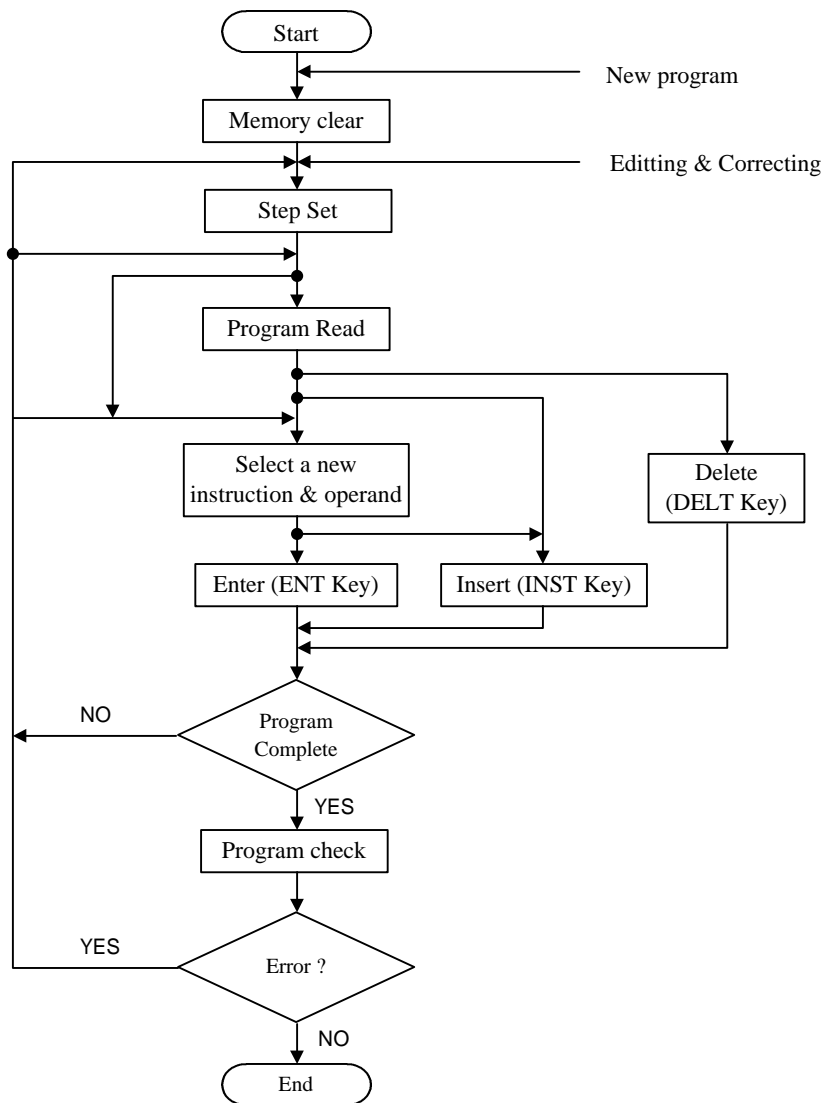
## 2.2 Product List

Unit	Type	Descriptions
KLD-150S	Handy Loader	LCD-attached programming tool Loader cable(1.5m) is included
KPM-128 KRM-256 KPM-256 KEW-150S	Memory Pack	EPROM(12.5V) Pack RAM Pack EPROM Writer
KLC-010	Loader Cable	MASTER - Loader cable for K10S/K10S1 (Not supplied with KLD-150S)
KLA-010	Adapter	9 : 9pin genda changer, Pin 2,3 Parallel (Not supplied with KLD-150S)

2.3 Power On Flow - chart



## 2.4 Program Flow - Chart





## CHAPTER 3 SPECIFICATIONS

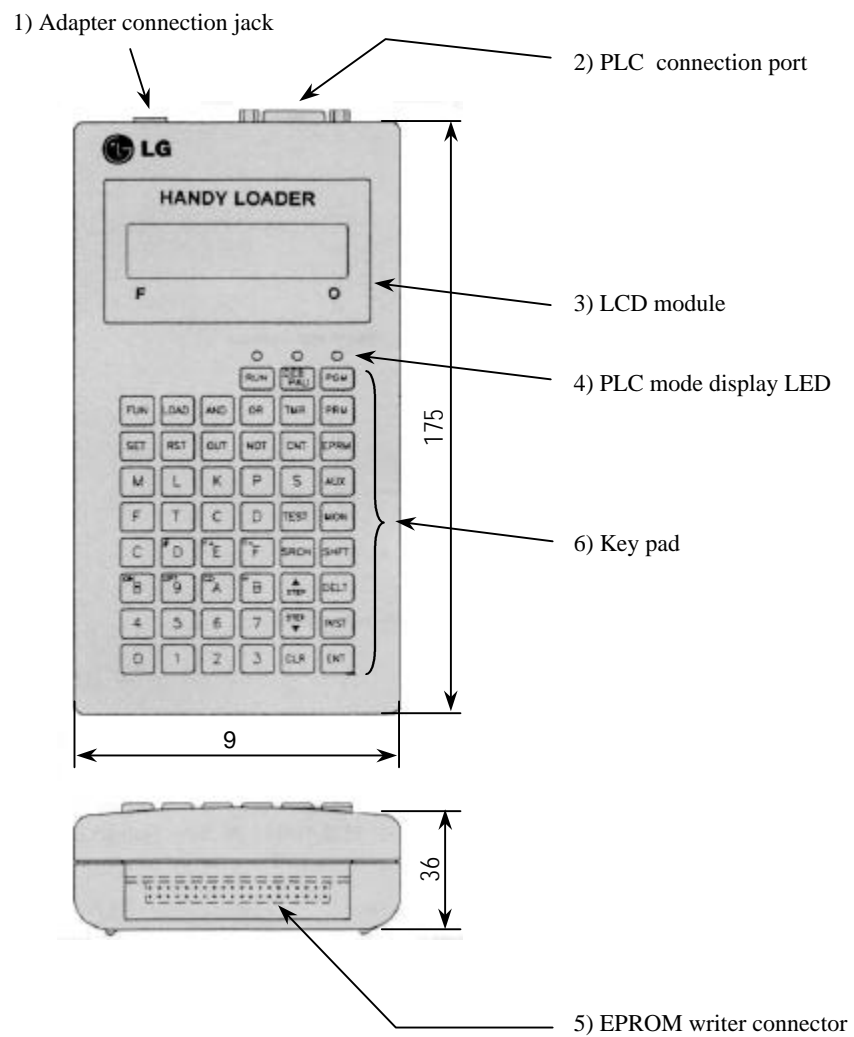
### 3.1 General Specifications

Item	Specifications
Storage temperature range	- 10      50
Operating temperature range	0      40
Ambient humidity range	5      95% (Non-condensing)
Operating ambience	Free from corrosive gases
Dimensions	90W × 175H × 36D [mm <sup>3</sup> ]
Weight	420 g
Cooling method	Self cooling

### 3.2 Performance Specifications

Item	Specifications
Available PLC	MASTER-K Series
Power supply	Connected PLC. DC 5V 0.6A
Connection method with PLC	Connected by loader cable Interface : RS-232C, 9.6Kbps (K10S, K30S, K60S) 38.4Kbps (K200S, K300S, K1000S)
LCD display	16 character, 2 line Dot matrix LCD LCD back light : On/Off by key operation turned off automatically after 10 min. since last key operation
Key pannel	3 Mode LED. 3 Mode Key. 48 key - keypad Key-Buzzer function - Error or key operating - On/Off select function
Programming method	On-Line : Inputs program direct to PLC program area Off-Line : KEW-150S and KLS-05A is required
Complement	16K, 32K Byte EPROM

### 3.3 Parts and Description



1) External power supply jack

A connector jack for external power supply

2) PLC connection port

Loader cable port. PLC can be connected to this port by loader cable.

3) LCD module

16 character, 2 line dot matrix LCD module is used.

LCD back light makes it possible operating under dark environments.

4) PLC mode display LED

LEDs that indicates the current PLC mode. There is four mode according to the PLC status - RUN, PAUSE, PROGRAM, DEBUG mode

5) EPROM writer Connector

A connector for KEW - 150S(Optional module).

EPROM read, write, verify and blank check functions are available.

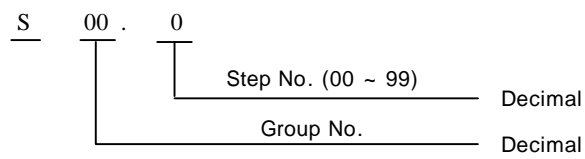
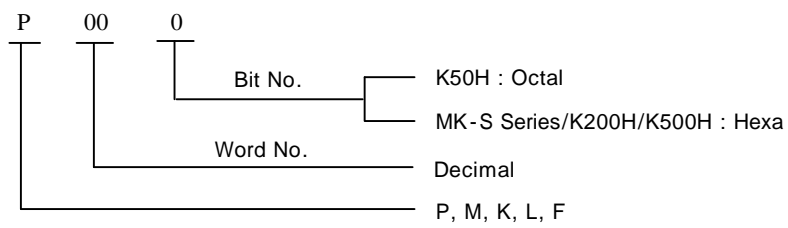
6) Key pad

Key type	Name	Function
Mode Key	RUN	Changes the PLC mode into RUN.
	DEB /PAU	Changes a PLC into PAUSE mode from RUN mode or into DEBUG mode from PROGRAM mode.
	PGM	Changes the PLC mode into PROGRAM.
Shift Key	SHFT	In order to execute a senconary function, press this key ahead of multi-function key. This key takes effect on only one execution.
Execution Key	ENT	Inputs user programs into the PLC program area or inputs user data into the data area. (D, T/C, M etc.)
	CLR	Get back to the previous state. SHFT+CLR sweeps out the LCD. (Clear)
	TEST	Can be used to change the word value such as current vlaue and set value of T/C or D register value.
	SRCH	search a command or bit in program or search the end of program(search)
	DELT	Delete specific steps in user program.
	INST	Insert specific steps in user program.
	STEP ▼	Displays next step of user program or next bit, next card in monitoring status.
	▲ STEP	Displays previous step of user program or previous bit, previous card in monitoring status.
Command Key	LOAD	Used in LOAD, LOAD NOT, AND LOAD, OR LOAD
	AND	Used in AND, AND NOT, AND LOAD
	OR	Used in OR, OR NOT, OR LOAD
	NOT	Used in LOAD NOT, AND NOT, OR NOT, NOT

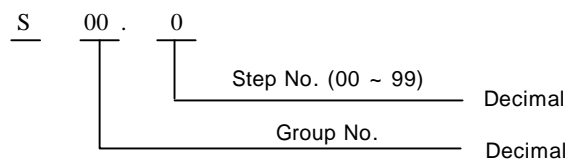
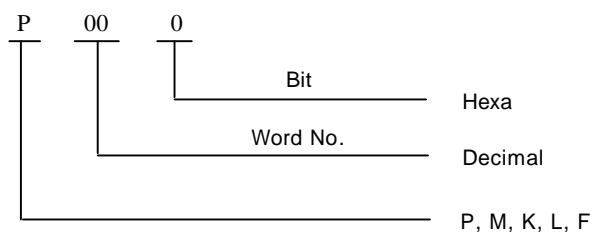
Key type	Name	Function
Command Key	OUT	OUT
	SET	SET
	RST	RST (Reset)
	FUN	Loads the application commands
	TMR	Loads timer-related functions (TON,TOFF,TMR,TMON,TRTG)
	CNT	Loads counter-related functions ( CTU, CTD, CTUD, CTR )
Area Key	P	I/O bit or word
	M	Auxiliary bit or word
	K	Keep(non-volatile) relay (bit or word)
	L	Link relay (bit or word)
	T	Timer
	C	Counter
	F	Special relay (bit or word)
	S	Step controller
	D	Data register
Number Key	0 ~ 9 A ~ F	Inputs numbers such as Addresss, I/O relay No., Data Register No.
Other Key	PRM	Get into the parameter editing status.
	EPRM	Used when read or write a user program to EPROM.
	ON (8)	Forces a relay ON
	OFF (9)	Forces a relay OFF
	CD (A)	Set the operands(P, L, M, K, F, S) unit as word
	H (B)	Inputs hexadecimal numbers
	• (-) (C)	Minus(-) (e.g. Timer reference value)
		Dealing step controller (S area)
	# (D)	Indirect addressing of a Data Register
	F+ (E)	Increases the function number of application functions
	F- (F)	Decreases the function number of application functions
	AUX	Select an auxiliary function
	MON	Monitor a device

### 3.4 Word, bit description of memory

#### 1) K10S1 ~ K500H







#### 2) MK1000H, GK3, 4, 5



### 3.5 Mode Description

KLD-150S is a programming tool for MASTER - K Series PLC.

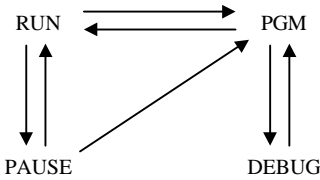
There are four operating modes.

Program	Mode	(  )
Run	Mode	(  )
Debug	Mode	(  )
Pause	Mode	(  )

#### 1) Mode selection

Each mode can be selected as shown below.

Mode LED turns on with respect to the current mode.

Mode	Mode Key	LED
PGM (Program Mode)	 <p>Mode changes are possible for only arrow directions Error message displays when error occurs changing the mode from PGM to RUN</p>	PGM LED
RUN (Run Mode)		RUN LED
DEB (Debug Mode)		PGM + PAU
PAU (Pause Mode)		RUN + PAU

## 2) Mode selection

	Mode	Functions	
KLD-150S Handy Loader	RUN / PAUSE	Program read Monitoring reference and current value of devices Device forced On/Off, changing the current value of card, timer/Counter Command and operand search Step monitor Scan time measure	
	PGM RUN PAUSE	EPROM Write EPROM Read/Write/Check/Verify	
	PGM RUN PAUSE	Power On Mode change Password register and change	
	PGM	Program input, insert, delete Bit, card, step monitor Bit, Card and Timer/Counter current value change Command and operand search Program delete Operand replace Set/Delete the parameters I/O table set and monitor Latch area set HSC (High Speed Counter) set	
	DEBUG	Trace run (Execut each step) Step break run (Stop at specific step) Scan break run (Executes specific times of scan then stop) Value break run (Stops when the specific bit or card value reaches to the reference value)	



## CHAPTER 4 KEY OPERATION

### 4.1 POWER ON (On Line)

Available mode			Note	
RUN/PAU	PGM	DEB	1) If no passwords are registered, password is set as '0000'. 2) When there is an error, error message such as 'SYSTEM ERROR' is displayed.	
Connect KLD-150S to the MASTER-K(hereafter, called PLC) CPU module through the loader cable(KLC-15A).				
Loader display		Key operations	Description	
<div>H A N D Y L O A D E R</div> <div>X X / X X / X X V E R . X X</div>			When KLD - 150S is just connected to the PLC, LCD shows this message for one second. "XX" represents the OS version-up date and the version number.	
<div>1 . P R O G R A M M E R</div> <div>2 . E P R O M W R I T E R</div>		1	This message appears when KEW - 150S is connected. 1 key leads you to the current mode. Press 2 key in order to use the KEW - 150S EPROM Writer functions.	
<div>* S e l f - t e s t i n g *</div> <div>* P l e a s e w a i t ! *</div>			Under communication testing between PLC and KLD - 150S	
<div>K 2 0 0 S A V X . X</div> <div>* P A S S W O R D : . . . *</div>			This message will not appear unless there is a password.  password input dialogue appears if there is no communication error and a password has been registered before.(PLC type displayed at first line)	
<div>K 2 0 0 S A V X . X</div> <div># # P R O G R A M # #</div>		CLR	This message means that there is no communication error. Shows current mode of PLC CPU module. (RUN, PGM, PAU/DEB)	
<div>0 0 0 0 0</div> <div></div>			Now KLD - 150S is ready to execute its various functions.	

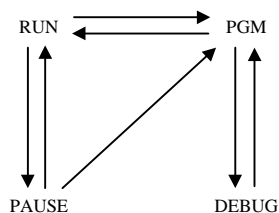
## 4.2 MODE CHANGE

There is four modes and three mode keys.

### 1) Mode key descriptions

Loader display	Key operations	Description
<div> <div>##PROGRAM##</div> <div>MODE</div> </div>	<div>PGM</div>	<div>PGM</div> Key changes PLC mode into program mode.
<div> <div>##RUN##</div> <div>MODE</div> </div>	<div>RUN</div>	<div>RUN</div> Key can be used when you would like to change the PLC mode into RUN mode.
<div> <div>##PAUSE##</div> <div>MODE</div> </div>	<div>DEB PAU</div>	<div>DEB PAU</div> Key changes the PLC mode from RUN to PAUSE, or from PGM to DEB
<div> <div>##PROGRAM##</div> <div>MODE</div> </div>	<div>PGM</div>	
<div> <div>##DEBUG##</div> <div>MODE</div> </div>	<div>DEB PAU</div>	

### 2) Mode key operation



Mode change is available only for arrow directions.

If there is an error, the error message will be shown when mode is changed from PGM to RUN.

There is no debug mode with K10S/K30S/K60S.

### 4.3 PASSWORD REGISTRATION

Available mode			Note
RUN/PAU	PGM	DEB	
		×	
Once a password is registered, there's no other people than user that can control the PLC.			
Loader display		Key operations	Description
<div>PLC PARAMETER</div> <div>1. LATCH AREA</div>		<div>PRM</div> <div>STEP STEP STEP STEP</div>	Parameter menu.
<div>PLC PARAMETER</div> <div>5. PASSWORD</div>		<div>ENT</div>	Manipulating <div>PRM</div> and <div>STEP</div> key, password menu appears. A <div>ENT</div> key will lead you to password input ready status.
<div>PASSWORD</div> <div>NEW : . . . .</div>		<div>1111</div>	Waiting for a new password.
<div>PASSWORD</div> <div>NEW :</div>		<div>1111</div>	Type in a new password
<div>PASSWORD</div> <div>VERIFY :</div>			Type in the password once more to verify the password.
<div>PLC PARAMETER</div> <div>5. PASSWORD</div>			Password registering completed.
<div>K200SA V1.2</div> <div>*PASSWORD: . . . .*</div>		<div>1111</div>	After registering a password, refresh the power then password input dialogue will appear.
<div>K200SA V1.2</div> <div>*PASSWORD: *</div>			Type in the password.
<div>## PROGRAM ##</div> <div>MODE</div>			If you type in the correct password, the PLC will get into the appropriate mode.

1) For K30S, K60S type, select 1st item, for K10S, K10S1, 60H, 200H type select 3rd item and for K250, 500H, 1000H, K200S, K300S, K1000S type select 5th item in PLC parameter menu.  
Methods of Registering, deleting, changing password are same with K200S.

PLC	PARAMETER		
1. PASSWORD			

## 4.4 PASSWORD CHANGE AND DISABLE

Available mode			Note
RUN/PAU	PGM	DEB	
		×	
This function is used to change or disable a password.			' ' is a notation that substitutes the password number in order to conceal it to others.
Loader display	Key operations	Description	
<div>P L C P A R A M E T E R</div> <div>I . L A T C H A R E A</div>	<div>PRM</div> <div>STEP STEP STEP STEP</div>	Password registering function menu	
<div>P L C P A R A M E T E R</div> <div>5 . P A S S W O R D</div>	<div>ENT</div>	Waiting for an input of existing password.	
<div>P A S S W O R D</div> <div>O L D : . . . .</div>	<div>1 1 1 1</div>	Assume that the existing password is '1111'.	
<div>P A S S W O R D</div> <div>O L D :</div>	<div>Does not appear when there is no password</div>	Type in the existing password.	
<div>P A S S W O R D</div> <div>N E W : . . . .</div>	<div>1 2 3 4</div>	Waiting for an input of new password.	
<div>P A S S W O R D</div> <div>N E W :</div>		If '0000' is set as a new password, it has same meaning with disabling the password function	
<div>P A S S W O R D</div> <div>N E W :</div>		Type in the new password.	
<div>P A S S W O R D</div> <div>V E R I F Y : . . . .</div>	<div>1 2 3 4</div>	Waiting for a password input in order to verify the new password.	
<div>P A S S W O R D</div> <div>V E R I F Y :</div>		Type in the same password once more.	
<div>P L C P A R A M E T E R</div> <div>5 . P A S S W O R D</div>		Password change has been completed.	

## 4.5 PROGRAM INPUT AND MODIFICATION

Available mode			Program	
RUN/PAU	PGM	DEB		
×		×	<div><div>M000</div><div><div><div></div></div></div><div>[ MOV P01 P05 ]</div></div>	
In this part, feeding a program data and modifying the program is shown.				
Loader display		Key operations	Description	
<div><div><div>K200SA</div><div>VX.X</div></div><div><div>##PROGRAM##</div></div></div>		<div>CLR</div>	<p>This message shows that the program input is available in PGM mode.</p> <p>"X.X" represents the O/S Version No.</p>	
<div><div><div>00000</div></div></div>		<div>LOADNOT</div> <div>M0</div>	<p>Waiting for a command input.</p>	
<div><div><div>00000</div><div>LOADNOT</div><div>M0000</div></div></div>		<div>ENT</div>	<p>Type in the user program.</p>	
<div><div><div>00001</div><div>FUN(0000)</div><div>NOP</div></div></div>		<div>FUN</div> <div>80</div>	<p>After programming 0 step, press <div>ENT</div> key then the command will be fed to PLC and KLD-150S is waiting for next command.</p>	
<div><div><div>00001</div><div>FUN(080)</div><div>MOV</div></div></div>		<div>ENT</div>	<p>If '80' is pressed, 'MOV' command will appear. And then p <div>ENT</div>g key, the command will be fed.</p> <p>In order to input an application command, type in the command number and then <div>ENT</div> key.</p>	

Loader display	Key operations	Description
<div>0 0 0 0 2    M O V</div> <div>&lt; 1 &gt;</div>	<div>P 1</div>	Waiting for an operand input.
<div>0 0 0 0 2    M O V</div> <div>&lt; 1 &gt;    P 0 0 1</div>	<div>ENT</div>	Type in 'P1'.
<div>0 0 0 0 4    M O V</div> <div>&lt; 2 &gt;</div>	<div>P 5</div>	Waiting for an operand input.
<div>0 0 0 0 4    M O V</div> <div>&lt; 2 &gt;    P 0 0 5</div>	<div>ENT</div>	type in 'P5'
<div>0 0 0 0 6</div> <div>F U N ( 0 0 0 )    N O P</div>		Waiting for 6th step command input.



Program modification is performed in **PGM** mode.

Use **STEP ▲**, **STEP ▼**, **SRCH** key to search the command, step, word no., byte no., Data and then modify it.

## 4.6 STEP SEARCH AND PROGRAM READING

Available mode			Note
RUN/PAU	PGM	DEB	
		×	
It is shown that how to find the specific step in order to read or monitor the user program.			One can modify or certify the user program in 'PGM' mode and can monitor in 'RUN' mode.
Loader display	Key operations	Description	
<div>0 1 2 3 4</div> <div>L O A D N O T M 0 0 1 0</div>	<div>SHIFT</div> <div>CLR</div>	At any screen, you can find the specific step. (Note1)	
<div>0 0 0 0 0</div>	<div>1</div> <div>3</div> <div>5</div> <div>7</div>	Current step is set to '0000' by pressing <div>SHIFT</div> <div>CLR</div> keys.	
<div>0 1 3 5 7</div>	<div>STEP</div> <div>▼</div>	In order to monitor the user program, the step number is entered	
<div>0 1 3 5 7</div> <div>A N D M 0 0 0 1</div>	<div>STEP</div> <div>▲</div>	The LCD shows the program in 'PGM' mode. Relay's ON/OFF state is indicted in 'RUN' mode	
<div>0 1 3 5 6</div> <div>L O A D N O T M 0 0 0 0</div>	<div>STEP</div> <div>▼</div> <div>STEP</div> <div>▼</div>	Using <div>STEP</div> <div>▲</div> <div>STEP</div> <div>▼</div> Key, current step can be shifted up/down.	
<div>0 1 3 5 8</div> <div>O U T P 0 0 0 0</div>	<div>CLR</div>		
<div>0 1 3 5 8</div> <div>O U T</div>	<div>CLR</div>	'P0000' is disappeared.	
<div>0 1 3 5 8</div>	<div>CLR</div>	'OUT' command disappeared.	
<div>0 0 0 0 0</div>		Return to 0 step.	

## 4.7 PROGRAM EXAMPLE

Note 1) In the Debug mode, execution select menu is displayed when   key is pressed.

#	#					D	E	B	U	G		#	#
						M	O	D	E				

SHIFT







#	#					D	E	B	U	G		#	#	SF
						M	O	D	E					

CLR

1	.	T	R	A	C	E		2	.	S	T	E	P	
3	.	S	C	A	N			4	.	V	A	L	U	E

Note 2) If you try to input the number that is greater than the maximum step value, it won't be fed.

### Remarks

- 1) If you read a step and press ', 
 key without modifying the command, KLD-150S reads the previous/next step.
- 2) If you press ', 
 key after modifying the command, KLD-150S reads current step.
- 3) Decreasing/Increasing of step number caused by pressing , 
 key is as follows.

General command(excluding S area), application command : occupies 1 step

General command(involved with S area), single area application command : occupies 2 steps

Application command whose operands are double length devices (Decimal, Hexadecimal) : occupies 4 step

Ex) DMOV M00 P00

DMOV 510 D000

1 step + 2 step + 2 step = 5 step

1 step + 4 step + 2 step = 7 step



## 4.8 PROGRAM INSERT

Available mode			Program	
RUN/PAU	PGM	DEB		
×		×		
Inserting a command or a 'NOP' in front of current step in program mode.				
Loader display		Key operations	Description	
<div>0 0 0 0 1</div> <div>o u T</div> <div>P 0 0 0 0</div>		<div>OR</div> <div>M 0 1 0</div>	<p>Type in the command at the step you want to insert in and then press <b>INST</b> key .</p>	
<div>0 0 0 0 1</div> <div>o R</div> <div>M 0 0 1 0</div>		<div>INST</div>	<p>Insert  at step1.</p>	
<div>0 0 0 0 2</div> <div>o u T</div> <div>P 0 0 0 0</div>		<div>ENT</div>	<p>'OUT P0000' command at step1 shifts down to step2.</p>	
<div>0 0 0 0 3</div> <div>L o A D</div> <div>F 0 0 9 3</div>		<div>LOAD</div> <div>P 0 2 0</div>	<p>Insert </p>	
<div>0 0 0 0 3</div> <div>L o A D</div> <div>P 0 0 2 0</div>		<div>INST</div> <div>FUN 8 0</div>	<p>Insert an application command.</p>	
<div>0 0 0 0 4</div> <div>F u N ( 0 8 0 )</div> <div>M O V</div>		<div>INST</div> <div>P 0 5</div>	<p>Insert  at step4.</p>	
<div>0 0 0 0 5</div> <div>&lt; 1 &gt;</div> <div>P 0 0 5</div>		<div>INST</div> <div>P 0 3</div>		

Loader display	Key operations	Description
<div>0 0 0 0 7</div> <div>&lt; 2 &gt;</div> <div>M O V</div> <div>P 0 0 3</div>	<div>INST</div>	
<div>0 0 0 0 9</div> <div>L O A D</div> <div>F 0 0 9 3</div>	<div>CLR CLR</div> <div>SHFT</div>	<p>When you insert 10 NOP at step9, step9 ~ step18 are filled with NOP.</p>
<div>0 0 0 0 9</div> <div>SF</div>	<div>1 0</div>	
<div>0 0 0 0 9</div> <div>0 0 0 1 0</div>	<div>INST</div>	<p>step9 ~ step18 are filled with NOP.</p>
<div>0 0 0 0 9</div> <div>F U N ( 0 0 0 )</div> <div>N O P</div>		

<p>1) If you press <div>INST</div> key instead of <div>ENT</div> Key, the content of current step is deleted and the new command intended to insert is overwritten.</p> <p>2) In case of application command, corresponding numbers of steps are inserted.</p> <p>3) In case of application command, use <div>ENT</div> key instead of <div>INST</div> key for the last device setting step.</p> <p>4) When you press <div>INST</div> key, the letter 'i' appears for a while beside the step number.</p> <p>Also, buzzer beeps twice.</p> <div>0 0 0 0 1</div> <div>O R</div> <div>M 0 0 1 0</div>
---

## 4.9 PROGRAM DELETE

Available mode			Program		
RUN/PAU	PGM	DEB			
		×			
Delete N step from current step.					
Loader display			Key operations	Description	
<div>00002</div> <div>LOAD</div> <div>P0001</div>			<div>DELT</div>	<div>P0001</div> <div>Delete</div> <div></div>	
<div>00002</div> <div>TON</div> <div>T0000</div>			<div>DELT</div>	<p>In case of timer or counter, all the command reference value, Word No. and Word Data are deleted.</p>	
<div>00002</div> <div>LOAD</div> <div>T0000</div>			<div>STEP</div> or <div>ENT</div>	<div>Delete step3 ~ step5</div> <div></div>	
<div>00003</div> <div>AND NOT</div> <div>M0010</div>			<div>DELT</div>	<div>Delete step7</div> <div>M0010</div> <div></div>	
<div>00003</div> <div>OUT</div> <div>P0010</div>			<div>CLR</div> <div>CLR</div>		
<div>00003</div> <div>LOAD</div> <div>SF</div>			<div>SHIFT</div>	<div>Delete N steps.</div>	
<div>00003</div> <div></div> <div>00010</div>			<div>0</div> <div>0</div> <div>1</div> <div>0</div>	<div>For example, delete 10 steps.</div>	
<div>00003</div> <div></div> <div>00010</div>			<div>DELT</div>	<div>Including</div> <div></div> <div>( OUT P0010 )</div>	
<div>00003</div> <div>LOAD</div> <div>M0020</div>				<div>After deleting step3 ~ step12, the command that was at step 13 comes to step1.</div>	

1) When you try to delete the timer, counter, application commands in the middle of the command, following message is appears. (Be sure to delete at 1st step of the command)

0 0 0 0 6 M I D D . E R R

< 2 > P 0 0 0

2) When you press 













DELT

 key, the letter 'd' appears for a while beside the step number. Also, buzzer beeps twice.

0 0 0 0 2 d

T O N T 0 0 0 0

#### 4.10 Bit No. SEARCH

Available mode			Note
RUN/PAU	PGM	DEB	In order to find the step no. of an application command, enter the command and press  key
		×	
The method for verification and modification, searching the relay, Timer, Counter is shown.			
Loader display	Key operations	Description	
<div>0 0 0 0 4</div> <div></div>	<div>   </div>	Type in the bit No. you want to find.	
<div>0 0 0 0 4</div> <div></div> <div>P 0 0 0 0</div>	<div></div>	Search the bit No. from current step.	
<div>0 0 0 2 1</div> <div>o u T</div> <div>P 0 0 0 0</div>	<div></div>	LCD shows the step that has the Bit No.	
<div>0 0 0 5 0</div> <div>o u T</div> <div>P 0 0 0 0</div>	<div></div>	Pressing the  key, KLD-150S searches the next corresponding step.	
<div>L o A D</div> <div>o u T</div> <div>P 0 0 0 0</div>	<div></div>	If there is no more matches, KLD-150S searches the Bit No. again from the first step.	
<div>0 0 2 2 0</div> <div>A N D</div> <div>P 0 0 0 0</div>	<div></div>		
<div>0 0 2 2 1</div> <div>o R</div> <div>P 0 0 0 0</div>	<div></div>		

1) LCD display during searching process.

0	0	0	0	4	S	e	a	r	c	h	i	n	g
					P	0	0	0	0				


2) LCD display when there is no such a Bit No.

0	0	0	0	4	N	o	t	F	o	u	n	d
					P	0	0	0	0			

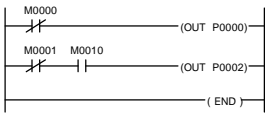
## 4.11 Word No. SEARCH

Available mode			Note		
RUN/PAU	PGM	DEB	<div>CLR</div> key clears the LCD screen. You can also find commands or numbers. Pressing the <div>SRCH</div> key alone will find 'END'.		
		×			
It is used to find the specific step in order to verify, modify the program.					
Loader display	Key operations		Description		
<div>0 0 0 5 0</div> <div>cd</div>	<div>CLR CLR</div> <div>PA</div>		In case of searching an Word No.		
			'cd' represents that the operand is a word.		
<div>0 0 0 5 0</div> <div>cd P 0 0 3</div>	<div>P 0 3</div> <div>SRCH</div>		Type in the Word No.		
<div>0 0 1 2 3</div> <div>&lt; 1 &gt;</div> <div>D E C P</div> <div>P 0 0 3</div>	<div>CLR CLR</div> <div>FUN 0 8 0</div>		Screen shows ths command that has the word P003.		
<div>0 0 1 2 3</div> <div>F U N ( 0 8 0 )</div> <div>M O V</div>	<div>SRCH</div>		Type in the command to find. (In case of finding MOV command)		
<div>0 0 1 5 7</div> <div>F U N ( 0 8 0 )</div> <div>M O V</div>	<div>STEP ▼</div>		LCD shows the step that has MOV command.		
<div>0 0 1 5 8</div> <div>&lt; 1 &gt;</div> <div>M O V</div> <div>0 0 0 4 5</div>	<div>SRCH</div>		Searches the step that has the Word No.as a decimal value.		
<div>0 0 1 7 2</div> <div>&lt; 1 &gt;</div> <div>A D D</div> <div>0 0 0 4 5</div>	<div>CLR CLR</div> <div>FUN 0 0 1</div>		Screen shows the step that has the decimal value '45'.		
<div>0 0 1 7 2</div> <div>F U N ( 0 0 1 )</div> <div>E N D</div>	<div>SRCH</div>		Finding the step that has the 'END' command.		
<div>0 1 5 2 0</div> <div>F U N ( 0 0 1 )</div> <div>E N D</div>			Search result is displayed.		

4.12 STEP MONITOR

Available mode		Program																																									
RUN/PAU	PGM																																										
	DEB																																										
	×																																										
	×																																										
Monitoring the program step by step in RUN mode.																																											
Loader display		Key operations	Description																																								
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L</td><td>O</td><td>A</td><td>D</td><td></td><td>N</td><td>O</td><td>T</td><td></td><td></td><td>M</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr></table>		0	0	0	0	0																L	O	A	D		N	O	T			M	0	0	0	0						<div>STEP ▼</div> <div>STEP ▼</div>	<p>Current step is set to '0000' by pressing <div>SHIFT</div> <div>CLR</div> key. Type in the step number to monitor.</p>
0	0	0	0	0																																							
L	O	A	D		N	O	T			M	0	0	0	0																													
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>2</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L</td><td>O</td><td>A</td><td>D</td><td></td><td>N</td><td>O</td><td>T</td><td></td><td></td><td>M</td><td>0</td><td>0</td><td>0</td><td>1</td><td></td><td></td><td></td><td></td><td></td></tr></table>		0	0	0	0	2																L	O	A	D		N	O	T			M	0	0	0	1						<div>STEP ▼</div>	<p>' ' represents that the circuit 'LOAD NOT M0001' is ON. ' ' shows that the circuit is OFF.</p>
0	0	0	0	2																																							
L	O	A	D		N	O	T			M	0	0	0	1																													
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>A</td><td>N</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>M</td><td>0</td><td>0</td><td>1</td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr></table>		0	0	0	0	3																A	N	D								M	0	0	1	0						<div>STEP ▼</div>	<p>You can monitor the command and the device status(ON or OFF) of step3.</p>
0	0	0	0	3																																							
A	N	D								M	0	0	1	0																													
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>O</td><td>U</td><td>T</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>P</td><td>0</td><td>0</td><td>0</td><td>2</td><td></td><td></td><td></td><td></td><td></td></tr></table>		0	0	0	0	4																O	U	T								P	0	0	0	2						<div>STEP ▼</div>	<p>Pressing <div>STEP ▼</div> key, you can monitor the next step.</p>
0	0	0	0	4																																							
O	U	T								P	0	0	0	2																													
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>F</td><td>U</td><td>N</td><td></td><td>(</td><td>0</td><td>0</td><td>1</td><td>)</td><td></td><td></td><td></td><td></td><td></td><td>E</td><td>N</td><td>D</td><td></td><td></td><td></td></tr></table>		0	0	0	0	5																F	U	N		(	0	0	1	)						E	N	D					
0	0	0	0	5																																							
F	U	N		(	0	0	1	)						E	N	D																											

## 4.13 BIT MONITOR

Available mode			Program	
RUN/PAU	PGM	DEB		
	×	×		
You can monitor the current step device status up to 4 devices simultaneously.				
Loader display		Key operations	Description	
<div>00002</div> <div>L O A D N O T M 0 0 0 1</div>		<div>PGM</div> <div>RUN</div>	PGM mode, command input status	
<div>00002</div> <div>L O A D N O T M 0 0 0 1</div>		<div>CLR</div> <div>CLR</div>	Step monitor in RUN mode.	
<div>00002</div> <div></div>		<div>M</div> <div>0</div> <div>0</div> <div>0</div>	Multiple bit monitoring.	
<div></div> <div></div>		<div>MON</div>	' ' represents that the bit monitoring is ON and ' ' shows that the bit is OFF.	
<div></div> <div>M 0 0 0 0</div>		<div>P</div> <div>0</div> <div>0</div> <div>0</div>	M0000, P0000, M0001 bit monitor.	
<div></div> <div></div>		<div>MON</div>	The bit transits in Z shape with every other MON key input.	
<div></div> <div>M 0 0 0</div>		<div>M</div> <div>0</div> <div>0</div> <div>1</div>	M0000, P0000, M0001 bit monitoring.	
<div></div> <div>P 0 0 0</div>		<div>MON</div>	M0000, P0000, M0001, M0010 bit monitoring.	
<div></div> <div>M 0 0 1</div>		<div>M</div> <div>0</div> <div>1</div> <div>0</div>	M0000, P0000, M0001, M0010 bit monitoring.	
<div></div> <div>M 0 0 0</div>		<div>MON</div>	M0000, P0000, M0001, M0010 bit monitoring.	
<div></div> <div>M 0 0 1</div>		<div>P</div> <div>0</div> <div>0</div> <div>2</div>	M0000, P0000, M0001, M0010 bit monitoring.	
<div></div> <div>P 0 0 0</div>		<div>MON</div>	M0000, P0000, M0001, M0010 bit monitoring.	
<div></div> <div>M 0 1 0</div>		<div>P</div> <div>0</div> <div>0</div> <div>2</div>	M0000, P0000, M0001, M0010 bit monitoring.	
<div></div> <div>P 0 0 0</div>		<div>CLR</div> <div>CLR</div> <div>CLR</div> <div>CLR</div>	Registering more than 4 bits, upper left side bit disappears.	
<div></div> <div>M 0 1 0</div>		<div>CLR</div> <div>CLR</div> <div>CLR</div> <div>CLR</div>	Registering more than 4 bits, upper left side bit disappears.	
<div>00002</div> <div></div>		<div>STEP</div> <div>▼</div>	Pressing <div>CLR</div> key, bits monitored disappear one by one.	
<div>00002</div> <div>L O A D N O T M 0 0 0 1</div>			Current step monitoring screen.	

## 4.14 WORD MONITOR

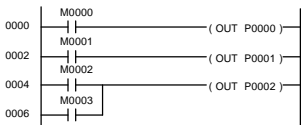
Available mode			Program		
RUN/PAU	PGM	DEB	<div><div>M0000</div><div>( MOV 00100 P000 )</div><div>F0093</div><div>( INCP P003 )</div><div>F0093</div><div>( DECP P005 )</div><div>M0001</div><div>( O'UT P001 )</div><div>( END )</div></div>		
	×	×			
Word unit Bit, Decimal, Hexa value monitoring is available. 3 Decimal, Hexa word can be monitored up to 3 word simultaneously					
Loader display		Key operations	Description		
<div><div>00000</div><div>L O A D N O T M 0 0 0 0</div></div>		<div><div>RUN</div><div>CLR CLR</div></div>	Step monitoring screen in RUN mode.		
<div><div>00000</div><div></div></div>		<div><div>coA</div><div>P</div><div>0</div></div>	Type in 'P000' word.		
<div><div>00003</div><div></div><div>cd P 0 0 0</div></div>		<div><div>MON</div></div>	Press <div>MON</div> key.		
<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div>P 0 0 0</div><div></div><div></div><div></div><div></div><div></div><div>h 0 0 6 4</div></div>		<div><div>P</div><div>3</div><div>MON</div></div>	Monitoring 'P000'. (In order to monitor in decimal number, press <div>"B</div> key)		
<div><div></div><div></div><div>P 0 0 0</div><div></div><div></div><div></div><div></div><div></div><div>P 0 0 3</div><div></div><div></div><div></div><div></div><div></div><div>h 0 0 6 4</div><div></div><div></div><div></div><div>h 0 0 B E</div></div>		<div><div>P</div><div>5</div><div>MON</div></div>	Monitors the P000, P003 simultaneously.		
<div><div></div><div></div><div>P 0 0 3</div><div></div><div></div><div></div><div></div><div></div><div>P 0 0 5</div><div></div><div></div><div></div><div></div><div></div><div>h 0 0 B E</div><div></div><div></div><div></div><div>h 0 0 6 5</div></div>		<div><div>SHFT</div><div>MON</div></div>	You can monitor up to 2 words. If you try to monitor more than 2 words, left side word will disappear from the screen.		



Loader display	Key operations	Description
<div> <div>F E D C B A 9 8 7</div> <div>P 0 0 5</div> </div>	<div>STEP</div>	<p>Monitoring P005. (16bit monitoring is available with K200S, K300S, K1000S)</p>
<div> <div>F E D C B A 9 8 7</div> <div>P 0 0 4</div> </div>	<div>CLR</div>	<p>Pressing <div>STEP</div> key, you can monitor the previous word.</p>
<div> <div>P 0 0 3</div> <div>P 0 0 4</div> <div>h 0 0 B E</div> <div>h 1 1 7 2</div> </div>	<div>P</div> <div>5</div> <div>MON</div>	
<div> <div>P 0 0 4</div> <div>P 0 0 5</div> <div>h 1 1 7 2</div> <div>h 0 0 6 5</div> </div>	<div>CLR</div>	<p>Monitors P004, P005 Word simultaneously. P003 Word is shifted to left and memorized.</p>
<div> <div>P 0 0 3</div> <div>P 0 0 4</div> <div>h 0 0 B E</div> <div>h 1 1 7 2</div> </div>	<div>MON</div>	<p>P005 word disappears and P003, P004 words are monitored.</p>
<div> <div>P 0 0 4</div> <div>P 0 0 0</div> <div>h 1 1 7 2</div> <div>h 0 0 6 4</div> </div>		<p>Pressing <div>MON</div> key, words are shifted to left and P000 that is memorized before appears. Up to 4 words can be memorized.</p>

<p>Note1) Up to 2 words can be monitored simultaneously, and 4 words can be input.</p> <p>That is to say, 2 words are memorize and once <div>CLR</div> key is pressed, words shift right so that you can certify the contents again. Press <div>MON</div> key, whole words rotate left and you can monitor its contents.</p> <p>Note2) Other PLCs except the New Master - K series can monitor up to 3 word.</p>
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4.15 BIT/WORD FORCED ON/OFF

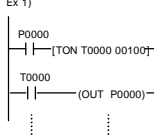
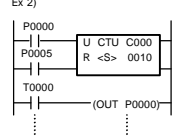

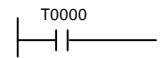

Available mode			Program		
RUN/PAU	PGM	DEB			
	x	x			
It shows how to change the current Bit/Word value.					
Loader display			Key operations	Description	
<div><div>00000</div><div>L O A D</div></div>			<div>CLR</div> <div>CLR</div>	<div>M0000 bit monitoring status.</div> <div>Force M0000 bit On.</div>	
<div><div>00000</div></div>			<div>M</div> <div>0</div> <div>MON</div>		
<div><div></div><div>M 0000</div></div>			<div>ON 8</div>		
<div><div></div><div>M 0000</div></div>			<div>P</div> <div>0</div> <div>MON</div>		
<div><div>M 0000</div><div>P 0000</div></div>			<div>CLR</div> <div>CLR</div> <div>SP A</div> <div>M</div> <div>0</div> <div>MON</div>		



## 4.16 CURRENT VALUE CHANGE

Available mode			Program			
RUN/PAU	PGM	DEB	<div><div>F0093</div><div><div><div></div><div></div></div></div><div>( DECP P0001 )</div><div>( END )</div></div>			
	×	×				
It is shown that the content of a word can be changed during monitoring the word.						
Loader display			Key operations		Description	
<div><div>00000</div><div>L O A D F 0 0 9 3</div></div>			<div>CLRCLR</div>		Step monitor display.	
<div><div>00000</div></div>			<div><div>OPAP1</div><div>MON</div></div>		Waiting for a key input.	
<div><div></div><div>P001</div><div>h0037</div></div>			<div>TEST</div>			
<div><div></div><div>P001</div><div>?????T</div></div>			<div><div>"BA9</div><div>ENT</div></div>			
<div><div></div><div>P001</div><div>h00A9</div></div>			<div><div>SHFTMON</div></div>		P001 word data is changed to A9H.	
<div><div>FEDCBA987</div><div>P001</div></div>			<div>TEST</div>		K10S,K10S1,60H,K100S,200H,250,500H,1000H, K3,K4,K5,K200S,K300S,K1000S displays the data in 16bit format.	
<div><div>FEDCBA987</div><div>M000</div></div>			<div><div>STEPSTEPON8ON8</div><div>ENT</div></div>		Waiting for a <div>ON8</div> <div>OFFg</div> key input.	
<div><div>FEDCBA987</div><div>M000</div></div>			<div>CLR</div>		The 14th, 13th bit of M000 word are forced On.	
<div><div></div><div>P001</div><div>h30A9</div></div>					Pressing <div>CLR</div> Key, word monitor screen appears again.	

## 4.17 TIMER/COUNTER INPUT

Available mode			Program	
RUN/PAU	PGM	DEB		
×		×		
It is shown that how to input or modify the timer/counter commands.			<div>Ex 1)</div>  <div>Ex 2)</div> 	
Loader display		Key operations	Description	
Ex1)				
<div>0 0 0 0 0</div> <div>L O A D</div> <div>P 0 0 0 0</div>		<div>LOAD P 0 ENT</div>	P0000 input for the TON	
<div>0 0 0 0 1</div> <div>T O N</div> <div>T 0 0 0 0</div>		<div>TMR T 0</div> <div>ENT</div>	Using <b>TMR</b> key, select timer function. Pressing <b>TMR</b> key once, TON is selected. Twice, TOFF. 3 times, TMR. 4 times, TMON. 5 times, TRTG. 6 times, TON is selected again.	
<div>0 0 0 0 2</div> <div>&lt; D A T A &gt;</div>		<div>1 0 0</div> <div>ENT</div>	Waiting for timer reference input.	
<div>0 0 0 0 2</div> <div>&lt; D A T A &gt;</div> <div>0 0 1 0 0</div>		<div>LOAD T 0</div> <div>ENT</div>	Input timer reference value. 	
<div>0 0 0 0 4</div> <div>L O A D</div> <div>T 0 0 0 0</div>		<div>OUT P 2</div> <div>ENT</div>	Input 'LOAD T0000'. 	
<div>0 0 0 0 5</div> <div>O U T</div> <div>P 0 0 0 2</div>			Input 'OUT P0002'. 	

Loader display	Key operations	Description
2) <div>0 0 0 0 0</div> <div>L O A D</div> <div>P 0 0 0 0</div>	<div>LOAD P 0 ENT</div> <div>LOAD P 5 ENT</div>	Input signal of CTU.
<div>0 0 0 0 1</div> <div>L O A D</div> <div>P 0 0 0 5</div>	<div>CNT C 0</div>	Counter reset signal input. Second counter input following 0 Step.
<div>0 0 0 0 2</div> <div>C T U</div> <div>C 0 0 0 0</div>	<div>ENT</div>	Using <b>TMR</b> key, select timer. Pressing <b>TMR</b> key once, TON is selected. Twice, TOFF. 3 times, TMR. 4times, TMON. 5 times, TRTG. 6 times, TON is selected again.
<div>0 0 0 0 3</div> <div>D A T A</div>	<div>1 0 0</div>	Waiting for the counter reference input.
<div>0 0 0 0 3</div> <div>D A T A</div> <div>0 0 1 0 0</div>	<div>ENT</div> <div>LOAD C 0</div>	Counter reference input.
<div>0 0 0 0 5</div> <div>L O A D</div> <div>C 0 0 0 0</div>	<div>ENT</div> <div>OUT P 3</div>	Input 'LOAD C0000'.
<div>0 0 0 0 6</div> <div>O U T</div> <div>P 0 0 0 3</div>		Input 'OUT P0003'.

1) Program modification is performed under **PGM** mode. Using **STEP** **STEP** **PGM** key, find the command, step, word No. and bit No. then modify it.

2) Pressing **TMR** or **CNT** key continuously, select the timer/counter you want and then press **ENT**

#### 4.18 DESCRIPTIONS

1) 'OPRND.ERR' message appears when the timer/counter reference value is greater than maximum.

Ex) When the timer/counter reference value is greater than its maximum 65535, follwing screen is displayed.


(When the device value of input application command is greater than the maximum, same error occurs.)

0	0	0	0	2		O	P	R	N	D	.	E	R	R	
D	A	T	A									6	5	5	3

2) The BCD command, that is the function whose function number is 130 ~ 147 cannot be used with "B" key.

3) A command that has a 'D' in front of the command name (e.g. DMOV), is a double word command.

And a command that has a 'P' at the end of the command name (e.g. MOVP), is a pulse command.

4) If  key is pressed continuously, commands are appear in following orders. Pressing key at any moment will input the shown command.

5) If **CNT** key is pressed continuously, commands appear in following orders. Pressing **ENT** key at any moment will input the shown command.

Up CounterDown CounterUp - Down CounterRing Counter

6) Beside the step number, the letter 'e' will appear for a while when you press **ENT** key after data input.

Also buzzer beeps twice.

0	0	0	0	3	e											
D	A	T	A									0	0	4	3	2

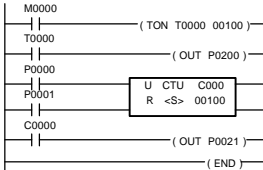
## 4.19 TIMER, COUNTER MONITOR

Available mode			Program 	
RUN/PAU	PGM	DEB		
	×	×		
Monitoring timers, counters.				
Loader display		Key operations		Description
<div>00000</div> <div>T O N</div> <div>00000</div>		<div>MON</div>		Input the step no. of timer, counter.
<div>00000</div> <div>0 N T 0000</div> <div>00100</div>		<div>C</div> <div>0</div> <div>MON</div>		Current step monitoring.
<div>0 N T 0000</div> <div>U P C 0000</div> <div>00100</div> <div>00000</div>		<div>STEP</div> <div>▼</div>		Monitoring screen of an on-delay timer T0000.
<div>0 N T 0000</div> <div>N U C 0001</div> <div>00100</div> <div>00000</div>		<div>STEP</div> <div>▲</div>		Monitoring screen of C0000 up counter.
<div>0 N T 0000</div> <div>U P C 0000</div> <div>00100</div> <div>00000</div>		<div>CLR</div>		On-delay timer T0000 scrolls left.
<div>00000</div> <div>0 N T 0000</div> <div>00100</div>		<div>SHFT</div> <div>MON</div>		Previous/next device can be monitored using <div>STEP</div> <div>▲</div> <div>STEP</div> <div>▼</div> key. (only for the right side of the device on the screen)
<div>T 0000 &lt; S &gt;</div> <div>0 N 00100</div> <div>00100</div>		<div>" B</div>		Right side device disappears.
<div>T 0000 &lt; S &gt;</div> <div>0 N h 0064</div> <div>h 0064</div>		<div>CLR</div>		Choose and display hexadecimal/decimal.
<div>00000</div> <div>0 N T 0000</div> <div>h 0064</div>				Return with <div>CLR</div> key.

1) 'D word No.' is displayed as a reference when D area device is used for timer/counter reference.

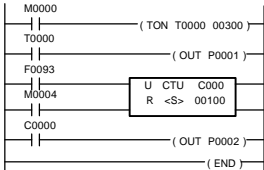


## 4.20 TIMER/COUNTER REFERENCE CHANGE

Available mode			Program		
RUN/PAU	PGM	DEB			
	×	×			
Changing timer/counter reference value during Run.					
Loader display			Key operations	Description	
<div>00001</div> <div>T O N</div>			<div>STEP</div> <div>▼</div>	TON timer reference value.	
<div>00002</div> <div>D A T A</div>			<div>TEST</div>		
<div>00002</div> <div>D A T A</div>			<div>4</div> <div>0</div> <div>0</div> <div>ENT</div>	Waiting for a new reference value	
<div>00002</div> <div>D A T A</div>			<div>STEP</div> <div>▼</div> <div>STEP</div> <div>▼</div> <div>STEP</div> <div>▼</div>	Reference is changed from '300' to '400'.	
<div>00008</div> <div>C T U</div>			<div>STEP</div> <div>▼</div>	CTU Counter reference value	
<div>00009</div> <div>D A T A</div>			<div>TEST</div>	Waiting for a new reference value.	
<div>00009</div> <div>D A T A</div>			<div>2</div> <div>0</div> <div>0</div> <div>ENT</div>	Reference value is changed from '100' to '200'.	

1) A reference value cannot be changed if it is set as D area device in program mode. Also a reference value that is in decimal/hexa(number) form cannot be changed into D area device.

## 4.21 TIMER/COUNTER FORCED ON/OFF & ELAPSED VALUE CHANGE

Available mode			Program		
RUN/PAU	PGM	DEB			
Forcing On/Off or changing elapsed value of timer, counter.					
Loader display		Key operations	Description		
<div>00000</div>		<div>CLR</div> <div>CLR</div>	Waiting for a command input.		
<div>ONT0000</div> <div>00300</div>		<div>T</div> <div>0</div> <div>MON</div>	Monitoring T0000 timer.		
<div>ONT0000</div> <div>?????T</div>		<div>TEST</div>	Current value reaches to reference '300', the bit turns on.		
<div>ONT0000</div> <div>00100T</div>		<div>1</div> <div>0</div> <div>0</div>	Current value change.		
<div>ONT0000</div> <div>00100</div>		<div>ENT</div>	Set the current value as '100'.		
<div>ONT0000</div> <div>00100</div>		<div>OFF 9</div>			
<div>ONT0000</div> <div>00100</div>		<div>C</div> <div>0</div> <div>MON</div>	Once a timer is forced off, the timer increases again from 100		

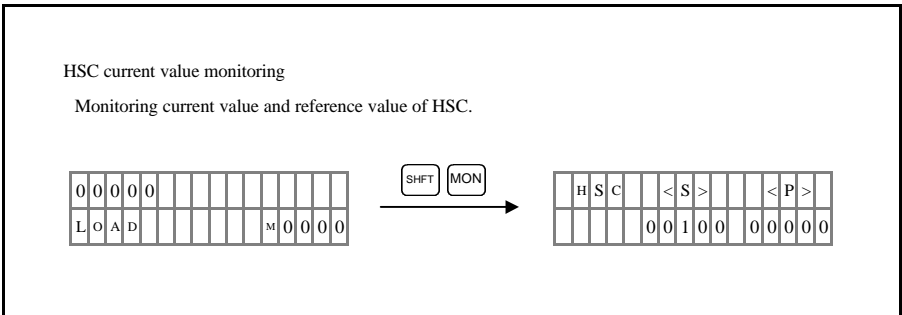
Loader display	Key operations	Description																														
<table><tr><td>o</td><td>N</td><td>T</td><td>0</td><td>0</td><td>0</td><td>0</td><td>u</td><td>P</td><td>C</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td></td><td></td><td></td><td>0</td><td>0</td><td>1</td><td>0</td><td></td><td></td><td></td><td>0</td><td>0</td><td>3</td><td>3</td><td>9</td></tr></table>	o	N	T	0	0	0	0	u	P	C	0	0	0	0				0	0	1	0				0	0	3	3	9	<div>TEST</div>	C000 Monitoring	
o	N	T	0	0	0	0	u	P	C	0	0	0	0																			
			0	0	1	0				0	0	3	3	9																		
<table><tr><td>o</td><td>N</td><td>T</td><td>0</td><td>0</td><td>0</td><td>0</td><td>u</td><td>P</td><td>C</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td></td><td></td><td></td><td>0</td><td>0</td><td>1</td><td>0</td><td></td><td></td><td></td><td>?</td><td>?</td><td>?</td><td>?</td><td>T</td></tr></table>	o	N	T	0	0	0	0	u	P	C	0	0	0	0				0	0	1	0				?	?	?	?	T	<div>5</div> <div>0</div>	Change current value Applied for only the devices on the right side.	
o	N	T	0	0	0	0	u	P	C	0	0	0	0																			
			0	0	1	0				?	?	?	?	T																		
<table><tr><td>o</td><td>N</td><td>T</td><td>0</td><td>0</td><td>0</td><td>0</td><td>u</td><td>P</td><td>C</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td></td><td></td><td></td><td>0</td><td>0</td><td>1</td><td>0</td><td></td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>5</td><td>0</td><td>T</td></tr></table>	o	N	T	0	0	0	0	u	P	C	0	0	0	0				0	0	1	0				0	0	0	5	0	T	<div>ENT</div>	
o	N	T	0	0	0	0	u	P	C	0	0	0	0																			
			0	0	1	0				0	0	0	5	0	T																	
<table><tr><td>o</td><td>N</td><td>T</td><td>0</td><td>0</td><td>0</td><td>0</td><td>u</td><td>P</td><td>C</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td></td><td></td><td></td><td>0</td><td>0</td><td>1</td><td>0</td><td></td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>5</td><td>1</td></tr></table>	o	N	T	0	0	0	0	u	P	C	0	0	0	0				0	0	1	0				0	0	0	5	1	<div>OFF 9</div>		
o	N	T	0	0	0	0	u	P	C	0	0	0	0																			
			0	0	1	0				0	0	0	5	1																		
<table><tr><td>o</td><td>N</td><td>T</td><td>0</td><td>0</td><td>0</td><td>0</td><td>u</td><td>P</td><td>C</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td></td><td></td><td></td><td>0</td><td>0</td><td>1</td><td>0</td><td></td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>7</td><td>2</td></tr></table>	o	N	T	0	0	0	0	u	P	C	0	0	0	0				0	0	1	0				0	0	0	7	2		Forcing off the C0000 bit.	
o	N	T	0	0	0	0	u	P	C	0	0	0	0																			
			0	0	1	0				0	0	0	7	2																		
<table><tr><td>o</td><td>N</td><td>T</td><td>0</td><td>0</td><td>0</td><td>0</td><td>u</td><td>P</td><td>C</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td></td><td></td><td></td><td>0</td><td>0</td><td>1</td><td>0</td><td></td><td></td><td></td><td>0</td><td>0</td><td>1</td><td>0</td><td>4</td></tr></table>	o	N	T	0	0	0	0	u	P	C	0	0	0	0				0	0	1	0				0	0	1	0	4		When the C0000 reaches to its reference, C0000 bit turns on. Thereafter the counter continues to increase til it reaches to its maximum.	
o	N	T	0	0	0	0	u	P	C	0	0	0	0																			
			0	0	1	0				0	0	1	0	4																		

1) Timer/counter forced on/off function is not available with K200S, K300S, K1000S.

## 4.22 HSC(High Speed Counter) DATA SETTING

Available mode			Note																																						
RUN/PAU	PGM	DEB																																							
×		×																																							
Setting HSC data.			Applicable only for K10S/K10S1, K30S, K60S.																																						
Loader display		Key operations		Description																																					
<table><tr><td>P</td><td>L</td><td>C</td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td></tr><tr><td>2</td><td>.</td><td>H</td><td>S</td><td>C</td><td>S</td><td>E</td><td>T</td><td></td><td></td><td></td><td></td></tr></table>		P	L	C	P	A	R	A	M	E	T	E	R	2	.	H	S	C	S	E	T					<div>PRMSTEP▼</div> <div>ENT</div>		Parameter menu screen.													
P	L	C	P	A	R	A	M	E	T	E	R																														
2	.	H	S	C	S	E	T																																		
<table><tr><td></td><td></td><td>H</td><td>S</td><td>C</td><td>S</td><td>E</td><td>T</td><td></td><td></td><td>0</td><td>0</td></tr><tr><td>&lt;</td><td>D</td><td>A</td><td>T</td><td>A</td><td>&gt;</td><td></td><td></td><td></td><td></td><td>0</td><td>0</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td><td>0</td></tr></table>				H	S	C	S	E	T			0	0	<	D	A	T	A	>					0	0											0	0	<div>100</div>		Waiting for HSC data input.	
		H	S	C	S	E	T			0	0																														
<	D	A	T	A	>					0	0																														
										0	0																														
<table><tr><td></td><td></td><td>H</td><td>S</td><td>C</td><td>S</td><td>E</td><td>T</td><td></td><td></td><td>#</td><td>0</td></tr><tr><td>&lt;</td><td>D</td><td>A</td><td>T</td><td>A</td><td>&gt;</td><td></td><td></td><td></td><td></td><td>0</td><td>0</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td><td>0</td></tr></table>				H	S	C	S	E	T			#	0	<	D	A	T	A	>					0	0											1	0	<div>ENT</div>		HSC data is set to 100.	
		H	S	C	S	E	T			#	0																														
<	D	A	T	A	>					0	0																														
										1	0																														
<table><tr><td></td><td></td><td>H</td><td>S</td><td>C</td><td>S</td><td>E</td><td>T</td><td></td><td></td><td></td><td>0</td></tr><tr><td>&lt;</td><td>S</td><td>E</td><td>T</td><td>&gt;</td><td>=</td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0</td><td>0</td></tr></table>				H	S	C	S	E	T				0	<	S	E	T	>	=		0	0	0	0	0											0	0	<div>1010</div>		Waiting for the P01 Card on data.	
		H	S	C	S	E	T				0																														
<	S	E	T	>	=		0	0	0	0	0																														
										0	0																														
<table><tr><td></td><td></td><td>H</td><td>S</td><td>C</td><td>S</td><td>E</td><td>T</td><td></td><td></td><td></td><td>0</td></tr><tr><td>&lt;</td><td>S</td><td>E</td><td>T</td><td>&gt;</td><td>=</td><td></td><td>1</td><td>0</td><td>1</td><td>0</td><td>*</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>*</td><td>*</td><td>*</td><td>*</td><td>*</td></tr></table>				H	S	C	S	E	T				0	<	S	E	T	>	=		1	0	1	0	*								*	*	*	*	*	<div>1010</div>		Set the P01 Card output data.	
		H	S	C	S	E	T				0																														
<	S	E	T	>	=		1	0	1	0	*																														
							*	*	*	*	*																														
<table><tr><td></td><td></td><td>H</td><td>S</td><td>C</td><td>S</td><td>E</td><td>T</td><td></td><td></td><td></td><td>0</td></tr><tr><td>&lt;</td><td>S</td><td>E</td><td>T</td><td>&gt;</td><td>=</td><td></td><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td></tr></table>				H	S	C	S	E	T				0	<	S	E	T	>	=		1	0	1	0	0	<div>ENT</div>															
		H	S	C	S	E	T				0																														
<	S	E	T	>	=		1	0	1	0	0																														

Loader display	Key operations	Description
<div> <div>H S C S E T 0 0</div> <div>&lt; R S T &gt; = 0 0 0 0 0 0 0 0</div> </div>	<div> <div>1 0 1 0</div> </div>	Waiting for the P01 Card off data.
<div> <div>H S C S E T 0 0</div> <div>&lt; R S T &gt; = 1 0 1 0 * * * *</div> </div>	<div> <div>1 0 0 0</div> </div>	Set the P01 Card output data.
<div> <div>H S C S E T 0 0</div> <div>&lt; R S T &gt; = 1 0 1 0 1 0 0 0</div> </div>	<div> <div>ENT</div> </div>	
<div> <div>H S C S E T 0 1</div> <div>&lt; D A T A &gt; 0 0 0 0 0</div> </div>	<div> <div>CLR</div> </div>	HSC 0 ~ 19 가 .
<div> <div>P L C P A R A M E T E R</div> <div>2 . H S C S E T</div> </div>		Return to the parameter menu.



#### 4.23 HSC(High Speed Counter) DATA SETTING WITH DEFAULT

Available mode			Note	
RUN/PAU	PGM	DEB	<div>HSC Setting → Default Parameter</div>	
		×		
Clear all the HSC setting and set default parameter.				
Loader display		Key operations	Description	
<div>00001</div> <div>LOAD NOT M0000</div>		<div>PRM</div> <div>STEP ▼</div>		
<div>PLC PARAMETER</div> <div>2.HSC SET</div>		<div>SHFT</div> <div>DELT</div>	Shows parameter menu.	
<div>* DEF AULT *</div> <div>* PRM WR ITE ? *</div>		<div>ENT</div>	Asking if you want to set the parameter as default.	
<div>* DEF AULT *</div> <div>** COM PLETE D ! **</div>		<div>CLR</div>	Default setting completed.	
<div>PLC PARAMETER</div> <div>2.HSC SET</div>			Showing parameter menu.	
<div>00000</div> <div></div>		<div>STEP ▼</div>		
<div>00000</div> <div>LOAD NOT M0000</div>				

## 4.24 Latch(Nonvolatile) AREA SETTING

Available mode			Note																								
RUN/PAU	PGM	DEB																									
×		×																									
User define function for setting volatile, nonvolatile area of devices.			Available for K10S/K60S/K200S/K300S/K1000S.																								
Loader display		Key operations	Description																								
<table><tr><td>P</td><td>L</td><td>C</td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td></tr><tr><td>1</td><td>.</td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td>A</td><td>R</td><td>E</td><td>A</td><td></td></tr></table>		P	L	C	P	A	R	A	M	E	T	E	R	1	.	L	A	T	C	H	A	R	E	A		<div>PRM</div> <div>ENT</div>	Shows parameter menu.
P	L	C	P	A	R	A	M	E	T	E	R																
1	.	L	A	T	C	H	A	R	E	A																	
<table><tr><td></td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>L</td><td>*</td><td>*</td><td>*</td><td>*</td><td>-</td><td>L</td><td>*</td><td>*</td><td>*</td><td>*</td></tr></table>			L	A	T	C	H								L	*	*	*	*	-	L	*	*	*	*	<div>STEP</div> <div>▼</div>	Shows latch area.
	L	A	T	C	H																						
	L	*	*	*	*	-	L	*	*	*	*																
<table><tr><td></td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td>1</td><td>0</td><td>0</td><td>m</td><td>S</td></tr><tr><td></td><td>T</td><td>0</td><td>1</td><td>4</td><td>4</td><td>-</td><td>T</td><td>0</td><td>1</td><td>9</td><td>1</td></tr></table>			L	A	T	C	H		1	0	0	m	S		T	0	1	4	4	-	T	0	1	9	1	<div>6</div> <div>0</div> <div>ENT</div>	Default latch area for 100ms timer.
	L	A	T	C	H		1	0	0	m	S																
	T	0	1	4	4	-	T	0	1	9	1																
<table><tr><td></td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td>1</td><td>0</td><td>0</td><td>m</td><td>S</td></tr><tr><td></td><td>T</td><td>0</td><td>0</td><td>6</td><td>0</td><td>-</td><td>T</td><td>0</td><td>1</td><td>9</td><td>1</td></tr></table>			L	A	T	C	H		1	0	0	m	S		T	0	0	6	0	-	T	0	1	9	1	<div>ENT</div>	Set latch area from T0060.
	L	A	T	C	H		1	0	0	m	S																
	T	0	0	6	0	-	T	0	1	9	1																
<table><tr><td></td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td></td><td>1</td><td>0</td><td>m</td><td>S</td></tr><tr><td></td><td>T</td><td>0</td><td>2</td><td>4</td><td>0</td><td>-</td><td>T</td><td>0</td><td>2</td><td>5</td><td>5</td></tr></table>			L	A	T	C	H			1	0	m	S		T	0	2	4	0	-	T	0	2	5	5	<div>STEP</div> <div>▼</div>	Default latch area for 10ms timer.
	L	A	T	C	H			1	0	m	S																
	T	0	2	4	0	-	T	0	2	5	5																
<table><tr><td></td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>C</td><td>0</td><td>1</td><td>9</td><td>2</td><td>-</td><td>C</td><td>0</td><td>2</td><td>5</td><td>5</td></tr></table>			L	A	T	C	H								C	0	1	9	2	-	C	0	2	5	5	<div>STEP</div> <div>▼</div>	Counter latch area.
	L	A	T	C	H																						
	C	0	1	9	2	-	C	0	2	5	5																
<table><tr><td></td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>D</td><td>3</td><td>5</td><td>0</td><td>0</td><td>-</td><td>D</td><td>4</td><td>5</td><td>0</td><td>0</td></tr></table>			L	A	T	C	H								D	3	5	0	0	-	D	4	5	0	0	<div>STEP</div> <div>▼</div>	D (Data) device latch area.
	L	A	T	C	H																						
	D	3	5	0	0	-	D	4	5	0	0																
<table><tr><td></td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td>S</td><td>8</td><td>0</td><td></td><td>-</td><td>S</td><td>9</td><td>9</td><td></td><td></td></tr></table>			L	A	T	C	H									S	8	0		-	S	9	9			<div>STEP</div> <div>▼</div>	S (Step Controller) latch area.
	L	A	T	C	H																						
		S	8	0		-	S	9	9																		
<table><tr><td></td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>M</td><td>*</td><td>*</td><td>*</td><td>*</td><td>-</td><td>M</td><td>*</td><td>*</td><td>*</td><td>*</td></tr></table>			L	A	T	C	H								M	*	*	*	*	-	M	*	*	*	*		M (Auxiliary Memory) latch area.
	L	A	T	C	H																						
	M	*	*	*	*	-	M	*	*	*	*																

- 1) After typing in the latch area you should press 

ENT

 key in order to modify the parameter.
- 2) When you press 

STEP ▼

 key, current value holds still.
- 3) In order to return to the parameter menu, press 

CLR

 key.

## 4.25 WDT SETTING

Available mode			Note																													
RUN/PAU	PGM	DEB																														
×		×																														
Limit maximum scan time by adjusting watch dog timer.			WDT has its range of 20(200ms) ~ 200(2000ms). (Available only for K200S,K300S,K1000S)																													
Loader display	Key operations	Description																														
<table><tr><td></td><td>P</td><td>L</td><td>C</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td></tr><tr><td>1</td><td>.</td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td>A</td><td>R</td><td>E</td><td>A</td><td></td><td></td><td></td></tr></table>		P	L	C		P	A	R	A	M	E	T	E	R		1	.	L	A	T	C	H		A	R	E	A				<div>PRM</div> <div>STEP ▼</div>	PLC parameter menu.
	P	L	C		P	A	R	A	M	E	T	E	R																			
1	.	L	A	T	C	H		A	R	E	A																					
<table><tr><td></td><td>P</td><td>L</td><td>C</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td></tr><tr><td>2</td><td>.</td><td>W</td><td>D</td><td>T</td><td></td><td>T</td><td>I</td><td>M</td><td>E</td><td></td><td></td><td></td><td></td><td></td></tr></table>		P	L	C		P	A	R	A	M	E	T	E	R		2	.	W	D	T		T	I	M	E						<div>ENT</div>	WDT setting menu.
	P	L	C		P	A	R	A	M	E	T	E	R																			
2	.	W	D	T		T	I	M	E																							
<table><tr><td></td><td></td><td>W</td><td>D</td><td>T</td><td></td><td>T</td><td>I</td><td>M</td><td>E</td><td></td><td>S</td><td>E</td><td>T</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>0</td><td>2</td><td>0</td><td>*</td><td></td><td>1</td><td>0</td><td>m</td><td>S</td><td></td></tr></table>			W	D	T		T	I	M	E		S	E	T							0	2	0	*		1	0	m	S		<div>3</div> <div>0</div>	WDT minimum value is 20 (200ms)
		W	D	T		T	I	M	E		S	E	T																			
					0	2	0	*		1	0	m	S																			
<table><tr><td></td><td></td><td>W</td><td>D</td><td>T</td><td></td><td>T</td><td>I</td><td>M</td><td>E</td><td></td><td>S</td><td>E</td><td>T</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>0</td><td>3</td><td>0</td><td>*</td><td></td><td>1</td><td>0</td><td>m</td><td>S</td><td></td></tr></table>			W	D	T		T	I	M	E		S	E	T							0	3	0	*		1	0	m	S		<div>ENT</div>	User defined value. Set WDT as 30(300ms).
		W	D	T		T	I	M	E		S	E	T																			
					0	3	0	*		1	0	m	S																			
<table><tr><td></td><td>P</td><td>L</td><td>C</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td></tr><tr><td>3</td><td>.</td><td>E</td><td>R</td><td>R</td><td>O</td><td>R</td><td></td><td>M</td><td>O</td><td>D</td><td>E</td><td></td><td></td><td></td></tr></table>		P	L	C		P	A	R	A	M	E	T	E	R		3	.	E	R	R	O	R		M	O	D	E					After setting returns to PLC parameter menu.
	P	L	C		P	A	R	A	M	E	T	E	R																			
3	.	E	R	R	O	R		M	O	D	E																					



## 4.26 ERROR MODE SETTING

Available mode			Note	
RUN/PAU	PGM	DEB		
×		×		
Determine whether run or stop the program when fuse error, expansion error, calculation error has occurred.			Only for K200S, K300S, K1000S.	
Loader display		Key operations	Description	
PLC PARAMETER 1. LATCH AREA		PRM STEP ▼	PLC parameter menu.	
PLC PARAMETER 2. WDT TIME		STEP ▼	WDT setting menu.	
PLC PARAMETER 3. ERROR MODE		ENT	Error mode setting menu.	
ERROR MODE FUSE ERROR : YES		OFF G	If you set to 'YES', the program runs even though the fuse error has occurred.	
ERROR MODE FUSE ERROR : NO		STEP ▼ or ENT	Set 'NO' if you want the program to stop in case of fuse error.	
ERROR MODE I/O ERROR : NO		STEP ▼ or ENT	The program stops when I/O fuse error has occurred.	
ERROR MODE OPR. ERROR : YES		STEP ▼ or ENT	Run the program even if the operation error has occurred.	
PLC PARAMETER 4. I/O TABLE			Return to PLC parameter menu.	

There is no fuse error item for K200S.

## 4.27 I/O TABLE SETTING

Available mode			Note		
RUN/PAU	PGM	DEB	* : Undefine	S : Special I/O	DLU : Data Link
×		×	I : Input	E : Empty Slot	RMU : Remote Link
			I/O : Hybrid	A/D : A/D Unit	PID : PID Unit
			O : Output	D/A : D/A Unit	POS :Position Unit
				HSC : High speed counter	
				LNK : Communication Unit	
Define the kind of I/O card to be mounted on each slot. (Only for K500H/K1000H/K200S/K300S/K1000S)					
Loader display		Key operations	Description		
<div><div>PLC PARAMETER</div><div>4. I / O TABLE</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × ×</div><div><div>I / O TABLE</div><div>ST 00 : × × × × × × × 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## 4.28 I/O TABLE MONITOR

Available mode			Note
RUN/PAU	PGM	DEB	
	×		
Monitoring the I/O kind connected to PLC. ( K10, K30S, K60S, K200S, K300S, K1000S )			
Loader display	Key operations	Description	
<div> <div>PLC PARAMETER</div> <div>1. LATCH AREA</div> </div>	<div>PRM</div> <div>STEP STEP STEP</div>	<div>PLC parameter menu.</div>	
<div> <div>PLC PARAMETER</div> <div>4. I / o TABLE</div> </div>	<div>MON</div>	<div>Press <div>STEP</div> key 3 times then I/O table menu appears.</div>	
<div> <div>I / o TABLE MON</div> <div>ST 00 : X X X X X X X X X X</div> </div>	<div>STEP STEP STEP</div> <div>STEP STEP STEP</div>	<div>Shows the current connected I/O card.</div> <div>K200S : Up to 12 I/O cards are available</div> <div>K300S : Up to 32 I/O cards are available</div> <div>K1000S : Up to 32 I/O cards are available</div>	
<div> <div>I / o TABLE MON</div> <div>ST 06 : X X X X X X X X X X</div> </div>	<div>STEP STEP STEP</div> <div>STEP STEP STEP</div>		
<div> <div>PLC PARAMETER</div> <div>5. PASSWORD</div> </div>		<div>LCD shows the next parameter menu after monitoring all the I/O slots.</div>	

## 4.29 PARAMETER SETTING WITH DEFAULT

Available mode			Note																													
RUN/PAU	PGM	DEB																														
×		×																														
Set all the parameters as default value.			Define all the parameters as default.																													
Loader display	Key operations	Description																														
<table><tr><td></td><td>P</td><td>L</td><td>C</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td></tr><tr><td>I</td><td>.</td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td>A</td><td>R</td><td>E</td><td>A</td><td></td><td></td><td></td></tr></table>		P	L	C		P	A	R	A	M	E	T	E	R		I	.	L	A	T	C	H		A	R	E	A				<div>PRM</div> <div>SHIFTDEL</div> <div>ENT</div>	<p>PLC parameter menu.</p> <p>Confirm writing default parameters.</p> <p>Returns to parameter menu after writing default parameter.</p>
	P	L	C		P	A	R	A	M	E	T	E	R																			
I	.	L	A	T	C	H		A	R	E	A																					

## 4.30 TRACE RUN

Available mode			Program	
RUN/PAU	PGM	DEB		
×	×			
Executes the user program step by step in order to debug the program.				
Loader display		Key operations	Description	
<div>0 0 0 0 0</div> <div>L O A D N O T M 0 0 0 0</div>		PGM DEB PAU		
<div># # D E B U G # #</div> <div>M O D E</div>		CLR	Shows that it is debug mode.	
<div>1 . T R A C E 2 . S T E P</div> <div>3 . S C A N 4 . V A L U E</div>		1	Function menu of debug mode.	
<div>S T A R T S T E P</div> <div>1 . F I R S T 2 . B . P .</div>		1	Determine the start step of trace run. (1 step run)	
<div>0 0 0 0 0</div>		STEP ▼	Start 1 step run from '00000 step'.	
<div>0 0 0 0 0</div> <div>L O A D N O T M 0 0 0 0</div>		STEP ▼	If you have selected the 'B.P.' as start step, trace will start from the pre-defined break point.	

Loader display	Key operations	Description
<div>0 0 0 0 1</div> <div>A N D M 0 0 0 2</div>	STEP ▼	
<div>0 0 0 0 1</div> <div>A N D N O T M 0 0 0 4</div>	STEP ▼	
<div>0 0 0 0 3</div> <div>O U T P 0 0 0 0</div>	STEP ▼	
<div>0 0 0 0 4</div> <div>L O A D N O T P 0 0 0 0</div>	STEP ▼	
<div>0 0 0 0 5</div> <div>F U N ( 0 8 0 ) M O V</div>	STEP ▼	In case of application command, middle step does not shown on the screen. Step number of following command appears on next trace.
<div>0 0 0 1 0</div> <div>F U N ( 0 0 1 ) E N D</div>	CLR CLR	
<div>1 . T R A C E 2 . S T E P</div> <div>3 . S C A N 4 . V A L U E</div>		Shows the function menu of debugging.

## 4.31 STEP BREAK RUN

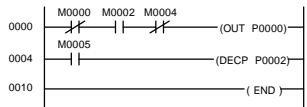
Available mode		Program	
RUN/PAU	PGM	DEB	
×	×		
Assign a specific step as a break point. The program will run until current step meets the break point.			
Loader display		Key operations	Description
<div>0 0 0 0 0</div> <div>L O A D N O T M 0 0 0 0</div>		PGM DEB PAU	Shows that it is debug mode.
<div># # D E B U G # #</div> <div>M O D E</div>		CLR	
<div>1 . T R A C E 2 . S T E P</div> <div>3 . S C A N 4 . V A L U E</div>		2	Function menu of debug mode. 1. TRACE : Execute step by step 2. STEP : Execute until current step reaches the break step 3. SCAN : Execute by specified scan times
<div>\$ S T E P B R E A K</div> <div>B R E A K S T E P = ? ? ? ?</div>		5	
<div>\$ S T E P B R E A K</div> <div>B R E A K S T E P = 0 0 0 5</div>		ENT	Assign 'step5' as a break point.
<div>S T A R T S T E P</div> <div>1 . F I R S T 2 . B . P .</div>		1 STEP ▼	Determine start step of break run. Select B.P. in order to start execution from pre-defined break point.
<div>0 0 0 0 0</div> <div>R u n n i n g</div>			
<div>0 0 0 0 5</div> <div>F U N ( 0 8 0 ) M O V</div>		CLR CLR	Execution breaks at step5
<div>\$ S T E P B R E A K</div> <div>B R E A K S T E P = ? ? ? ?</div>		CLR	Asking new break point.
<div>1 . T R A C E 2 . S T E P</div> <div>3 . S C A N 4 . V A L U E</div>			Debug mode function menu.

## 4.32 Scan Run

Available mode		Program	
RUN/PAU	PGM	DEB	
×	×		
Execute the program during defined scan times.		<pre> 0000  M0000 M0002 M0004 (OUT P0000)       /--- --- ---        P0000 0004   --- --- ---  (MOV 55 P0001)       M0005 0010   --- --- ---  (DECP P0002)        --- --- ---  0014   --- --- ---  (END )           </pre>	
Loader display	Key operations	Description	
<div>0 0 0 0 0</div> <div>L O A D N O T M 0 0 0 0</div>	PGM DEB PAU	Shows that it is debug mode.	
<div># # D E B U G # #</div> <div>M O D E</div>	CLR		
<div>1 . T R A C E 2 . S T E P</div> <div>3 . S C A N 4 . V A L U E</div>	3	Function menu of debug mode. 1. TRACE : Execute step by step 2. STEP : Execute until current step reaches the break step 3. SCAN : Execute by specified scan times	
<div>\$ S C A N B R E A K</div> <div>B R E A K S C A N = ? ? ? ?</div>	2 0 0	Type in scan times for break. 65535 is maximum scan times.	
<div>\$ S C A N B R E A K</div> <div>B R E A K S C A N = 0 2 0 0</div>	ENT		
<div>S T A R T S T E P</div> <div>1 . F I R S T 2 . B . P .</div>	1 STEP ▼	Determine break run start step. Select B.P. in order to start execution from pre-defined break point.	
<div>0 0 0 0 0</div> <div>R u n n i n g</div>			
<div>0 0 0 0 5</div> <div>F U N ( 0 0 1 ) E N D</div>	CLR CLR	Stops running after 200 scan execution.	
<div>\$ S C A N B R E A K</div> <div>B R E A K S C A N = ? ? ? ?</div>	CLR	Asking new break scan number.	
<div>1 . T R A C E 2 . S T E P</div> <div>3 . S C A N 4 . V A L U E</div>		Debug mode function menu.	



### 4.33 VALUE BREAK RUN

Available mode			Note																																
RUN/PAU	PGM	DEB																																	
x	x																																		
Execution stops when a bit or a word value equals with defined value.																																			
Loader display		Key operations	Description																																
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L</td><td>O</td><td>A</td><td>D</td><td></td><td>N</td><td>O</td><td>T</td><td></td><td></td><td>M</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td></tr></table>		0	0	0	0	0												L	O	A	D		N	O	T			M	0	0	0	0		<div>PGM</div> <div>DEB PAU</div>	
0	0	0	0	0																															
L	O	A	D		N	O	T			M	0	0	0	0																					
<table><tr><td>#</td><td>#</td><td></td><td></td><td></td><td>D</td><td>E</td><td>B</td><td>U</td><td>G</td><td></td><td>#</td><td>#</td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>M</td><td>O</td><td>D</td><td>E</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>		#	#				D	E	B	U	G		#	#									M	O	D	E								<div>CLR</div>	It is debug mode.
#	#				D	E	B	U	G		#	#																							
					M	O	D	E																											
<table><tr><td>1</td><td>.</td><td>T</td><td>R</td><td>A</td><td>C</td><td>E</td><td></td><td>2</td><td>.</td><td>S</td><td>T</td><td>E</td><td>P</td><td></td><td></td></tr><tr><td>3</td><td>.</td><td>S</td><td>C</td><td>A</td><td>N</td><td></td><td></td><td>4</td><td>.</td><td>V</td><td>A</td><td>L</td><td>U</td><td>E</td><td></td></tr></table>		1	.	T	R	A	C	E		2	.	S	T	E	P			3	.	S	C	A	N			4	.	V	A	L	U	E		<div>4</div>	Debug mode function menu.
1	.	T	R	A	C	E		2	.	S	T	E	P																						
3	.	S	C	A	N			4	.	V	A	L	U	E																					
<table><tr><td>\$</td><td></td><td>V</td><td>A</td><td>L</td><td>U</td><td>E</td><td></td><td>B</td><td>R</td><td>E</td><td>A</td><td>K</td><td></td><td></td><td></td></tr><tr><td>O</td><td>P</td><td>:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>		\$		V	A	L	U	E		B	R	E	A	K				O	P	:													<div>OP A</div> <div>P</div> <div>2</div> <div>ENT</div>	Type in the device name that you want to set as a break piont.	
\$		V	A	L	U	E		B	R	E	A	K																							
O	P	:																																	
<table><tr><td>\$</td><td></td><td>V</td><td>A</td><td>L</td><td>U</td><td>E</td><td></td><td>B</td><td>R</td><td>E</td><td>A</td><td>K</td><td></td><td></td><td></td></tr><tr><td>O</td><td>P</td><td>:</td><td></td><td>cd</td><td>P</td><td>0</td><td>0</td><td>2</td><td></td><td>=</td><td></td><td></td><td></td><td></td></tr></table>		\$		V	A	L	U	E		B	R	E	A	K				O	P	:		cd	P	0	0	2		=					<div>"B</div> <div>OFF 9</div> <div>6</div>	Device value feds in word.	
\$		V	A	L	U	E		B	R	E	A	K																							
O	P	:		cd	P	0	0	2		=																									

Loader display	Key operations	Description
<div>\$ VALUE BREAK</div> <div>OP: cd P 0 0 2 = h 0 0 9 6</div>	<div>ENT</div>	<p>Execution stops when P02 card value equals h96.</p>
<div>START STEP</div> <div>1. FIRST 2. B.P.</div>	<div>1</div>	<p>Determine start step of break run.</p> <p>Select B.P. in order to start execution from pre-defined break point.</p>
<div>0 0 0 0 0</div> <div></div>	<div>STEP ▼</div>	
<div>0 0 0 0 0 0 0 2 4 9</div> <div>R u n n i n g h 0 0 F 9</div>		
<div>0 0 0 0 5</div> <div>F U N ( 0 2 5 )</div> <div>↑</div> <div>D E C P</div>	<div>CLR CLR</div>	<p>Execution stops when P02 word equals h96.</p> <p>↑ shows that the pulse command is executed.</p>
<div>\$ VALUE BREAK</div> <div>OP:</div>	<div>CLR</div>	<p>Type in the device for value break run.</p>
<div>1. TRACE 2. STEP</div> <div>3. SCAN 4. VALUE</div>		<p>Debug mode function menu.</p>

## 4.34 PROGRAM PARTIAL CLEAR

Available mode		Program
RUN/PAU	PGM	
×	×	
Delete a part of user program.		
Loader display	Key operations	Description
<div>0 1 2 2 5</div> <div>LOAD F 0 0 9 3</div>	AUX	Press <b>AUX</b> key under PGM mode step monitoring status.
<div>1 . M C L R 2 . D C L R</div> <div>3 . S U B S . 4 . B L O C K</div>	1	Clear menu appears.
<div>START STEP :</div> <div></div>	1 0 0 ENT	After selecting 'memory clear', type in the deleting start step.
<div>START STEP : 0 0 1 0 0</div> <div>END STEP :</div>	2 5 0	Type in the deleting end step.
<div>START STEP : 0 0 1 0 0</div> <div>END STEP : 0 0 2 5 0</div>	ENT	Step number input complete.
<div>0 0 1 0 0 - 0 0 2 5 0</div> <div>* MEMORY CLEAR? *</div>	ENT	Confirm memory clear.
<div>* MEMORY *</div> <div>* Cleared! *</div>	CLR	Memory deleting is completed.
<div>1 . M C L R 2 . D C L R</div> <div>3 . S U B S . 4 . B L O C K</div>		Return to clear menu.

## 4.35 DEVICE DATA CLEAR

Available mode			Program	
RUN/PAU	PGM	DEB		
×		×	<div><div>M0000</div><div> </div><div>T0072</div><div> </div><div>F0092</div><div> </div><div>M0010</div><div> </div><div>C0000</div><div> </div><div>( TON T0072 00100 )</div><div>( OUT P0000 )</div><div>U CTU C0096 R &lt;S&gt; 00200</div><div>( OUT P0021 )</div></div>	
Select devices and delete its data.				
Loader display			Key operations	Description
<div>00001</div> <div>T O N</div>			<div>PGMAUX</div>	Press <div>AUX</div> key under PGM mode step monitoring status.
<div>1.MCLR2.DCLR</div> <div>3.SUBS4.BLOCK</div>			<div>2</div>	Clear menu appears.
<div>*DATACLEAR*</div> <div>PMLKLSSTCD</div>			<div>P</div>	Select devices not to clear. Devices on the screen will be deleted.
<div>*DATACLEAR*</div> <div>MLKLSSTCD</div>			<div>M</div>	Do not delete P area.
<div>*DATACLEAR*</div> <div>MLKLSSTCD</div>			<div>K</div>	Do not delete M area.
<div>*DATACLEAR*</div> <div>MLKLSSTCD</div>			<div>S</div>	Do not delete K area.
<div>*DATACLEAR*</div> <div>MLKLSSTCD</div>			<div>D</div>	Do not delete S area.
<div>*DATACLEAR*</div> <div>MLKLSSTCD</div>			<div>ENT</div>	Delete all the L, T, C area.
<div>LTC</div> <div>*DATACLEAR?*</div>			<div>ENT</div>	Confirm data clear.
<div>*DATA*</div> <div>**Cleared!**</div>			<div>CLR</div>	Data deleting is completed.
<div>1.MCLR2.DCLR</div> <div>3.SUBS4.BLOCK</div>				Return to clear menu.

## 4.36 DATA BLOCK CHANGE

Available mode			Program	
RUN/PAU	PGM	DEB		
×		×		
Replace specific device with other device in specific area of user program.			<div><div>0000</div><div>M0000</div><div>(SET P0000)</div></div> <div><div>0002</div><div>M0001</div><div>M0000</div><div>(OUT P0001)</div></div>	
Loader display			Key operations	Description
<div>00000</div> <div>LOAD</div> <div></div> <div>M0000</div>			<div>PGM</div> <div>AUX</div>	<div>Press <div>AUX</div> key under PGM mode step monitoring status.</div>
<div>1.M CLR</div> <div>2.D CLR</div> <div>3.SUBS.</div> <div>4.BLOCK</div>			<div>3</div>	<div>Clear menu appears.</div>
<div>FROM:</div>			<div>M</div> <div>ENT</div>	<div>Type in the device name to change.</div>
<div>FROM:</div> <div>TO:</div>			<div>M</div> <div>1</div> <div>2</div> <div>3</div>	<div>Type in the device name that substituts the M0000.</div>
<div>FROM:</div> <div>TO:</div>			<div>ENT</div>	<div>Replace M0000 with M0123.</div>
<div>START STEP:</div>			<div>0</div> <div>ENT</div>	<div>Start step of the area that the substitution take place.</div>
<div>START STEP:00000</div> <div>END STEP:</div>			<div>4</div>	<div>End step of the area that the substitution take place.</div>
<div>START STEP:00000</div> <div>END STEP:00004</div>			<div>ENT</div>	<div>Substitution will take place between step0 and step4.</div>
<div>* 0000 STEP *</div> <div>* Substituting! *</div>				<div>Executing substitution.</div>
<div>* 0002 STEP *</div> <div>* Substituted! *</div>			<div>CLR</div>	<div>2 operands are substituted.</div>
<div>1.M CLR</div> <div>2.D CLR</div> <div>3.SUBS.</div> <div>4.BLOCK</div>				<div>Return to clear menu.</div>

## 4.37 BLOCK MOVE/COPY

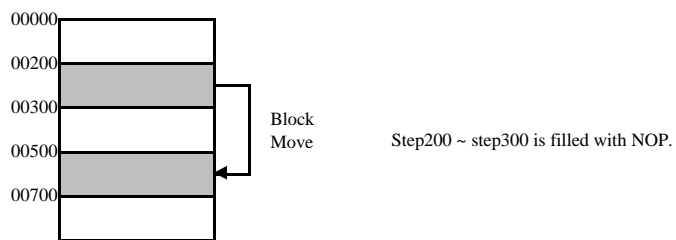
Available mode			Program	
RUN/PAU	PGM	DEB		
x		x		
Copy or move specific part of the user program				
Loader display		Key operations	Description	
0 0 0 0 0 L O A D M 0 0 0 0		PGM AUX	Press <b>AUX</b> key under PGM mode step monitoring status.	
1 . M C L R 2 . D C L R 3 . S U B S . 4 . B L O C K		4	Clear menu appears.	
1 . B L O C K M O V E 2 . B L O C K C O P Y		1 or 2	Select block move or block copy.	
S T A R T S T E P :  S T A R T S T E P : 0 0 0 2 0 E N D S T E P :		2 0 ENT	Type in the start step of the block.	
S T A R T S T E P : 0 0 0 2 0 E N D S T E P : 0 0 0 3 0		3 0	Type in the start step of the block.	
S T A R T S T E P : 0 0 0 2 0 E N D S T E P : 0 0 0 3 0		ENT	Area from step20 to step30 is selected as block.	
0 0 0 2 0 . 0 0 0 3 0 D E S T . S T E P :		6 0	Type in the step number to paste.	
0 0 0 2 0 . 0 0 0 3 0 D E S T . S T E P : 0 0 0 6 0		ENT	Copy or move the block from step20 to step30 and paste it to step60.	
* B L O C K M O V E * * * C o m p l e t e d ! * *		CLR (In case of block move)	Move complete. (Block move)	
* B L O C K C O P Y * * * C o m p l e t e d ! * *		CLR (In case of block copy)	Copy complete. (Block copy)	
1 . M C L R 2 . D C L R 3 . S U B S . 4 . B L O C K			Return to clear menu.	

#### 4.38 BLOCK MOVE/COPY DESCRIPTION

##### 1) Block Move

The start step or end step should not be in the middle of application command.

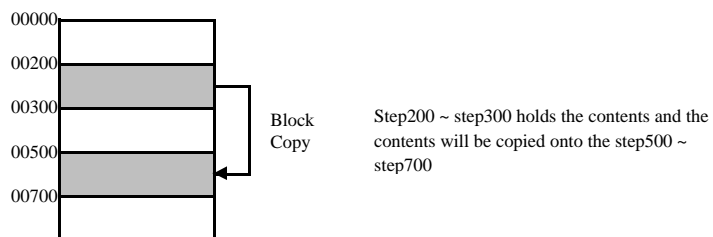
If it is in the middle of an application command, error code is generated.



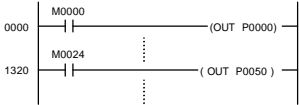
##### 2) Block Copy

The start step or end step should not be in the middle of application command.

If it is in the middle of an application command, error code is generated.



### 4.39 PROGRAM ALL CLEAR

Available mode			Note																																									
RUN/PAU	PGM	DEB																																										
x		x																																										
Delete all the user program.																																												
Loader display		Key operations	Description																																									
<table><tr><td>0</td><td>1</td><td>3</td><td>2</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L</td><td>O</td><td>A</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td>M</td><td>0</td><td>0</td><td>2</td><td>4</td><td></td><td></td><td></td><td></td><td></td></tr></table>		0	1	3	2	0																L	O	A	D							M	0	0	2	4						<div>CLR</div>		
0	1	3	2	0																																								
L	O	A	D							M	0	0	2	4																														
<table><tr><td>0</td><td>1</td><td>3</td><td>2</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L</td><td>O</td><td>A</td><td>D</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>		0	1	3	2	0																L	O	A	D																	<div>CLR</div>	Device M0024 disappears.	
0	1	3	2	0																																								
L	O	A	D																																									
<table><tr><td>0</td><td>1</td><td>3</td><td>2</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>		0	1	3	2	0																																				<div>CLR</div>	Load command disappears.	
0	1	3	2	0																																								
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>		0	0	0	0	0																																				<div>SHIFT</div>		
0	0	0	0	0																																								
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>SF</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>		0	0	0	0	0														SF																						<div>DELT</div>		
0	0	0	0	0														SF																										
<table><tr><td>P</td><td>G</td><td>M</td><td></td><td>A</td><td>L</td><td>L</td><td></td><td>C</td><td>L</td><td>E</td><td>A</td><td>R</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>*</td><td>*</td><td>S</td><td>u</td><td>r</td><td>e</td><td>?</td><td></td><td>&lt;</td><td>E</td><td>N</td><td>T</td><td>&gt;</td><td>*</td><td>*</td><td></td><td></td><td></td><td></td><td></td></tr></table>		P	G	M		A	L	L		C	L	E	A	R								*	*	S	u	r	e	?		<	E	N	T	>	*	*						<div>ENT</div>	Confirm claearing all the program.	
P	G	M		A	L	L		C	L	E	A	R																																
*	*	S	u	r	e	?		<	E	N	T	>	*	*																														
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>F</td><td>U</td><td>N</td><td>(</td><td>0</td><td>0</td><td>0</td><td>)</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>N</td><td>O</td><td>P</td><td></td><td></td></tr></table>		0	0	0	0	0																F	U	N	(	0	0	0	)								N	O	P				You can certify the result.	
0	0	0	0	0																																								
F	U	N	(	0	0	0	)								N	O	P																											

All the steps from step0 to the last step are filled with the 'NOP'.



#### 4.40 EPROM BLANK CHECK

Available mode			Note	
RUN/PAU	PGM	DEB		
x		x		
Execute the blank checking of the EPROM mounted on the KEW-150S EPROM writer.			Certify if the EPROM is cleared.	
Loader display		Key operations	Description	
0 0 0 0 0				
L O A D				
1 . E P R O M W R I T E R		PGM CLR EPRM		
2 . F L A S H		1	Select EPROM or flash memory. (This message is shown only for K200S)	
1 . E . C H K 2 . W R I T E		1	EPROM function menu.	
3 . V E R I F Y 4 . R E A D				
* C H E C K E P R O M *				
1 2 8 K R O M < E N T >		STEP ▼	Select appropriate ROM.	
* C H E C K E P R O M *		ENT		
5 1 2 K R O M < E N T >				
* E P R O M E . C H K *			Execute erase check (ROM blank check)	
** 0 1 3 8 0 S T E P **				
* E P R O M E . C H K *			Execution complete.	
** C O M P L E T E D ! *		CLR		
1 . E . C H K 2 . W R I T E			EPROM function menu.	
3 . V E R I F Y 4 . R E A D				

1) If the EPROM is not blank, following message is displayed.

```
* E P R O M E . C H K *
** F A I L E D ! **
```

2) You can terminate the execution by pressing the CLR key. In that case, following message appears.

```
* E P R O M E . C H K *
** C a n c e l e d ! **
```

3) Following EPROMs are applicable.

EPROM that has the writing voltage of  $V_{pp}=12.5V$ ,  $V_{cc}=6V$ .

High speed programming function 128K ROM : TM 27C128(T.I) D27128A(INTEL)

256K ROM : MBM 27C256A - 25(FUJITSU) NMC 27C256(NEC)

Available RAM is DS1235(DALLAS) that supports the self back-up.

#### 4.41 EPROM WRITE

Available mode			Note	
RUN/PAU	PGM	DEB	<div> <div>PLC CPU (program area)</div> <div>Write →</div> <div>ROM Pack or RAM Pack on KEW-150S</div> </div>	
×		×		
Transfer the PLC user program to the EPROM, RAM(pack) mounted on the KEW-150S.				
Loader display		Key operations	Description	
<div>0 0 0 0 0</div> <div>LOAD</div> <div>M 0 0 0 0</div>		<div>PGM CLR EPRM</div>		
<div>1 . EPROM WRITER</div> <div>2 . FLASH</div>		<div>1</div>	Select EPROM or flash memory. (This message is shown only for K200S)	
<div>1 . ECHK 2 . WRITE</div> <div>3 . VERIFY 4 . READ</div>		<div>2</div>	EPROM function menu.	
<div>* CHECK EPROM *</div> <div>1 2 8 K ROM &lt;ENT&gt;</div>		<div>STEP ▼ × 2</div>	Select appropriate ROM.	
<div>* CHECK EPROM *</div> <div>2 5 6 K RAM &lt;ENT&gt;</div>		<div>ENT</div>		
<div>* EPROM WRITER *</div> <div>** 0 3 6 8 STEP **</div>			Transfer the PLC user program to the EPROM, RAM Pack.	
<div>* EPROM WRITER *</div> <div>** COMPLETED! **</div>		<div>CLR</div>	Execution complete.	
<div>1 . ECHK 2 . WRITE</div> <div>3 . VERIFY 4 . READ</div>			EPROM function menu.	

1) When there is an error during writing an EPROM, following message appears.

\* EPROM WRITER \*

\*\* FAILED! \*\*

## 4.42 EPROM VERIFY

Available mode			Note	
RUN/PAU	PGM	DEB	<div>PLC CPU</div> <div>Verify</div> <div>ROM Pack or RAM Pack on KEW-150S</div> <div>(program area)</div>	
×		×		
Compare and verify the contents of EPROM, RAM pack with the PLC user program.				
Loader display			Key operations	Description
<div>00000</div> <div>LOAD</div> <div>M0000</div>			<div>PGM</div> <div>CLR</div> <div>EPRM</div>	
<div>1.EPROMWRITER</div> <div>2.FLASH</div>			<div>1</div>	Select EPROM or flash memory. (This message is shown only for K200S)
<div>1.ECHK2.WRITE</div> <div>3.VERIFY4.READ</div>			<div>2</div>	EPROM function menu.
<div>*CHECKEPROM*</div> <div>128KROM&lt;ENT&gt;</div>			<div>STEP</div> <div>▼</div> <div>× 3</div>	Select appropriate ROM.
<div>*CHECKEPROM*</div> <div>256KROM&lt;ENT&gt;</div>			<div>ENT</div>	
<div>*EPROMVERIFY*</div> <div>**0567STEP**</div>				Compare and verify the contents of EPROM, RAM pack with PLC user program.
<div>*EPROMVERIFY*</div> <div>**COMPLETED!**</div>			<div>CLR</div>	Execution complete.
<div>1.ECHK2.WRITE</div> <div>3.VERIFY4.READ</div>				EPROM function menu.

1) When there is an error during verifying an EPROM, following message appears.

* E P R O M V E R I F Y *
** F A I L E D ! **

## 4.43 EPROM READ

Available mode			Note	
RUN/PAU	PGM	DEB	<div> <div>PLC CPU (program area)</div> <div>Read</div> <div>ROM Pack or RAM Pack on KEW-150S</div> </div>	
×		×		
Transfer the contents of EPROM, RAM(pack) mounted on the KEW-150S to the PLC user program area.				
Loader display		Key operations	Description	
<div>0 0 0 0 0</div> <div>LOAD</div> <div>M 0 0 0 0</div>		<div>PGM CLR EPRM</div>		
<div>1 . EPROM WRITER</div> <div>2 . FLASH</div>		<div>1</div>	Select EPROM or flash memory. (This message is shown only for K200S)	
<div>1 . ECHK 2 . WRITE</div> <div>3 . VERIFY 4 . READ</div>		<div>2</div>	EPROM function menu.	
<div>* CHECK EPROM *</div> <div>128K ROM &lt;ENT&gt;</div>		<div>STEP ▼ × 3</div>	Select appropriate ROM.	
<div>* CHECK EPROM *</div> <div>256K ROM &lt;ENT&gt;</div>		<div>ENT</div>		
<div>* EPROM READ *</div> <div>** 0278 STEP **</div>			Reading EPROM, RAM pack, transfer it to PLC program area.	
<div>* EPROM READ *</div> <div>** COMPLETED! **</div>		<div>CLR</div>	Execution complete.	
<div>1 . ECHK 2 . WRITE</div> <div>3 . VERIFY 4 . READ</div>			EPROM function menu.	

1) When there is an error during reading an EPROM, following message appears.

*	E	P	R	O	M	R	E	A	D	*
*	*	F	A	I	L	E	D	!	*	*

#### 4.44 SCAN TIME DISPLAY

Available mode			Note	
RUN/PAU	PGM	DEB		
	×	×		
Shows the 1 scan elapsed time for K200S,K300S,K1000S. For K10S,K30S,K60S current reference of high speed counter displayed.			Display the minimum value, current value, maximum value of 1 scan elapsed time.	
Loader display		Key operations	Description	
<div>0 0 0 0 0</div> <div>L O A D</div>		<div>CLR CLR</div>	Step monitoring status in RUN mode.	
<div>0 0 0 0 0</div>		<div>MON</div>	Shows the 1 scan elapsed time.	
<div>M I N . C U R . M A X .</div> <div>0 0 0 3 0 0 0 4 0 0 0 5</div>		<div>CLR</div>		
<div>0 0 0 0 0</div>		<div>STEP ▼</div>	Step monitoring status in RUN mode.	
<div>0 0 0 0 0</div> <div>L O A D</div>				

##### Note

- 1) The unit of scan time is 'msec'
  - 2) The unit become 'sec' when the scan time exceeds 100 msec.
- ex) 64.6    64.6 msec
- 2.04 s    2.04 sec

# 4.45 SCAN TIMED / HSC MONITOR (K10S/K30S/K60S)

Available mode			Note	
RUN/PAU	PGM	DEB		
		×		
Monitor 1 scan time and the reference, current value of HSC.			Only for K10S/K30S/K60S.	
Loader display		Key operations	Description	
<div>0 0 0 0 0</div> <div>L O A D</div>		<div>CLR CLR</div>	Step monitoring status in RUN mode.	
<div>0 0 0 0 0</div>		<div>MON</div>		
<div>H S C &lt; S &gt; &lt; P &gt;</div> <div>0 1 0 0 0 0 0 9 9 9</div>		<div>MON</div>	Monitor the reference, current value of HSC.	
<div>M I N . C U R . M A X .</div> <div>0 . 1 0 . 2 0 . 3</div>		<div>CLR CLR</div>	minimum, current, maximum value of 1 scan elapsed time is displayed. (unit : msec) (Whenever pressing <div>MON</div> key, scan time and HSC monitor swaps with each other)	
<div>0 0 0 0 0</div>				

#### 4.46 RTC(Real Time Clock)SETTING AND MONITORING

Available mode			Note
RUN/PAU	PGM	DEB	
		×	
Set RTC and monitor the real time. (K10S/K30S/K60S/K200S/K300S/K1000S)			For K10S/K30S/K60S, RTC is option. For K200S, type A does not support RTC. But type B and C supports the function.
Loader display	Key operations	Description	
<div>0 0 0 0 0</div> <div></div>	<div>CLR CLR</div> <div>SHFT T</div>		
<div>9 9 Y 0 8 M 1 0 D T U</div> <div>1 1 H 2 7 M 3 5 S</div>	<div>ENT</div>	Monitoring RTC. (Year, Month, Date, Day, Hour, Minute, Second) For K10S/K30S/K60S, press <div>SHFT</div> <div>MON</div>	
<div>9 9 Y 0 8 M 1 0 D T U</div> <div>1 1 H 2 7 M 3 5 S</div>	<div>TEST</div>	' ' indicates the current modifying position.	
<div>9 9 Y ? ? M 1 0 D T U</div> <div>1 1 H 2 7 M 3 5 S</div>	<div>0 <div>OFF 9</div> ENT</div>	Modify the month.	
<div>9 9 Y 0 9 M 1 0 D T U</div> <div>1 1 H 2 7 M 3 5 S</div>	<div>ENT TEST</div> <div>STEP ▲ STEP ▼</div>		
<div>9 9 Y 0 9 M 1 0 D F R</div> <div>1 1 H 2 7 M 3 5 S</div>		Modify the day.	

# 4.47 HEXA DECIMAL CHANGE

Available mode			Note	
RUN/PAU	PGM	DEB		
		×		
Converts hexa number into decimal, or decimal to hexa.				
Loader display		Key operations	Description	
<div>00000</div> <div>LOAD NOT M0000</div>		<div>SHFT</div> <div>AUX</div>	Step monitoring status in RUN mode.	
<div>FROM :</div>		<div>6</div> <div>5</div> <div>5</div> <div>3</div> <div>5</div>	Type in the decimal number. (convert decimal into hexadecimal)	
<div>FROM : 0000065535</div>		<div>ENT</div>		
<div>FROM : 0000065535</div> <div>TO : h0000FFFF</div>		<div>CLR</div>		
<div>FROM :</div>		<div>"B</div> <div>F</div> <div>F</div> <div>F</div> <div>F</div>	Waiting for another number.	
<div>FROM : h0000FFFF</div>		<div>ENT</div>	Type number in hexadecimal form. (convert hexadecimal into decimal)	
<div>FROM : h0000FFFF</div> <div>TO : 0000065535</div>		<div>CLR</div> <div>CLR</div>		
<div>00000</div>		<div>STEP</div> <div>▼</div>		
<div>00000</div> <div>LOAD NOT M0000</div>				



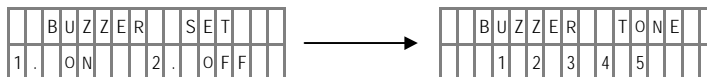
#### 4.48 LCD BACK LIGHT ON/OFF

Available mode			Note																																
RUN/PAU	PGM	DEB																																	
			Loader display for K10S/K30S/K60S.																																
Turn on or off the LCD back light.			<table><tr><td>1</td><td>.</td><td>L</td><td>C</td><td>D</td><td>2</td><td>.</td><td>B</td><td>U</td><td>Z</td><td>Z</td><td>E</td><td>R</td><td></td></tr><tr><td>3</td><td>.</td><td>P</td><td>R</td><td>O</td><td>G</td><td>R</td><td>A</td><td>M</td><td>M</td><td>O</td><td>D</td><td>E</td><td></td></tr></table>		1	.	L	C	D	2	.	B	U	Z	Z	E	R		3	.	P	R	O	G	R	A	M	M	O	D	E				
1	.	L	C	D	2	.	B	U	Z	Z	E	R																							
3	.	P	R	O	G	R	A	M	M	O	D	E																							
Loader display			Key operations		Description																														
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L</td><td>O</td><td>A</td><td>D</td><td></td><td>N</td><td>O</td><td>T</td><td></td><td></td><td>M</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>			0	0	0	0	0										L	O	A	D		N	O	T			M	0	0	0	0	<div>SHIFT</div> <div>PRM</div>		Step monitoring status in RUN mode.	
0	0	0	0	0																															
L	O	A	D		N	O	T			M	0	0	0	0																					
<table><tr><td></td><td>H</td><td>.</td><td>L</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td></tr><tr><td>1</td><td>.</td><td>L</td><td>C</td><td>D</td><td>2</td><td>.</td><td>B</td><td>U</td><td>Z</td><td>Z</td><td>E</td><td>R</td><td></td></tr></table>				H	.	L		P	A	R	A	M	E	T	E	R		1	.	L	C	D	2	.	B	U	Z	Z	E	R		<div>1</div>		Loader parameter menu.	
	H	.	L		P	A	R	A	M	E	T	E	R																						
1	.	L	C	D	2	.	B	U	Z	Z	E	R																							
<table><tr><td></td><td>L</td><td>C</td><td>D</td><td></td><td>B</td><td>A</td><td>C</td><td>K</td><td>.</td><td>L</td><td>I</td><td>G</td><td>H</td><td>T</td></tr><tr><td>1</td><td>.</td><td>O</td><td>N</td><td></td><td>2</td><td>.</td><td>O</td><td>F</td><td>F</td><td></td><td></td><td></td><td></td></tr></table>				L	C	D		B	A	C	K	.	L	I	G	H	T	1	.	O	N		2	.	O	F	F					<div>2</div>		Current state of LCD back light.	
	L	C	D		B	A	C	K	.	L	I	G	H	T																					
1	.	O	N		2	.	O	F	F																										
<table><tr><td></td><td>L</td><td>C</td><td>D</td><td></td><td>B</td><td>A</td><td>C</td><td>K</td><td>.</td><td>L</td><td>I</td><td>G</td><td>H</td><td>T</td></tr><tr><td>1</td><td>.</td><td>O</td><td>N</td><td></td><td>2</td><td>.</td><td>O</td><td>F</td><td>F</td><td></td><td></td><td></td><td></td></tr></table>				L	C	D		B	A	C	K	.	L	I	G	H	T	1	.	O	N		2	.	O	F	F					<div>CLR</div>		Turn off the LCD back light.	
	L	C	D		B	A	C	K	.	L	I	G	H	T																					
1	.	O	N		2	.	O	F	F																										
<table><tr><td></td><td>H</td><td>.</td><td>L</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td></tr><tr><td>1</td><td>.</td><td>L</td><td>C</td><td>D</td><td>2</td><td>.</td><td>B</td><td>U</td><td>Z</td><td>Z</td><td>E</td><td>R</td><td></td></tr></table>				H	.	L		P	A	R	A	M	E	T	E	R		1	.	L	C	D	2	.	B	U	Z	Z	E	R		<div>CLR</div> <div>STEP ▼</div>		Loader parameter menu.	
	H	.	L		P	A	R	A	M	E	T	E	R																						
1	.	L	C	D	2	.	B	U	Z	Z	E	R																							
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L</td><td>O</td><td>A</td><td>D</td><td></td><td>N</td><td>O</td><td>T</td><td></td><td></td><td>M</td><td>0</td><td>0</td><td>0</td><td>0</td></tr></table>			0	0	0	0	0										L	O	A	D		N	O	T			M	0	0	0	0				
0	0	0	0	0																															
L	O	A	D		N	O	T			M	0	0	0	0																					

## 4.49 BUZZER CONTROL

Available mode			Note																																							
RUN/PAU	PGM	DEB																																								
Turn on/off the buzzer or set the buzzer tone.			Loader display for K10S/K30S/K60S.																																							
			<table><tr><td>1</td><td>.</td><td>L</td><td>C</td><td>D</td><td>2</td><td>.</td><td>B</td><td>U</td><td>Z</td><td>Z</td><td>E</td><td>R</td><td></td></tr><tr><td>3</td><td>.</td><td>P</td><td>R</td><td>O</td><td>G</td><td>R</td><td>A</td><td>M</td><td>M</td><td>O</td><td>D</td><td>E</td><td></td></tr></table>												1	.	L	C	D	2	.	B	U	Z	Z	E	R		3	.	P	R	O	G	R	A	M	M	O	D	E	
1	.	L	C	D	2	.	B	U	Z	Z	E	R																														
3	.	P	R	O	G	R	A	M	M	O	D	E																														
Loader display			Key operations			Description																																				
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L</td><td>O</td><td>A</td><td>D</td><td></td><td>N</td><td>O</td><td>T</td><td></td><td></td><td>M</td><td>O</td><td>0</td><td>0</td></tr></table>			0	0	0	0	0										L	O	A	D		N	O	T			M	O	0	0	<div>SHIFT</div> <div>PRM</div>			Step monitoring status in RUN mode.								
0	0	0	0	0																																						
L	O	A	D		N	O	T			M	O	0	0																													
<table><tr><td></td><td>H</td><td>.</td><td>L</td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td></tr><tr><td></td><td>1</td><td>.</td><td>L</td><td>C</td><td>D</td><td>2</td><td>.</td><td>B</td><td>U</td><td>Z</td><td>Z</td><td>E</td><td>R</td></tr></table>				H	.	L	P	A	R	A	M	E	T	E	R			1	.	L	C	D	2	.	B	U	Z	Z	E	R	<div>2</div>			Loader parameter menu.								
	H	.	L	P	A	R	A	M	E	T	E	R																														
	1	.	L	C	D	2	.	B	U	Z	Z	E	R																													
<table><tr><td></td><td></td><td>B</td><td>U</td><td>Z</td><td>Z</td><td>E</td><td>R</td><td></td><td>S</td><td>E</td><td>T</td><td></td><td></td></tr><tr><td></td><td>1</td><td>.</td><td>O</td><td>N</td><td></td><td></td><td>2</td><td>.</td><td>O</td><td>F</td><td>F</td><td></td><td></td></tr></table>					B	U	Z	Z	E	R		S	E	T				1	.	O	N			2	.	O	F	F			<div>1</div>			Current state of buzzer.								
		B	U	Z	Z	E	R		S	E	T																															
	1	.	O	N			2	.	O	F	F																															
<table><tr><td></td><td></td><td>B</td><td>U</td><td>Z</td><td>Z</td><td>E</td><td>R</td><td></td><td>T</td><td>O</td><td>N</td><td>E</td><td></td></tr><tr><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>					B	U	Z	Z	E	R		T	O	N	E				1	2	3	4	5								<div>STEP</div> <div>▼</div>			Buzzer tone. (Default is '3'.)								
		B	U	Z	Z	E	R		T	O	N	E																														
		1	2	3	4	5																																				
<table><tr><td></td><td></td><td>B</td><td>U</td><td>Z</td><td>Z</td><td>E</td><td>R</td><td></td><td>T</td><td>O</td><td>N</td><td>E</td><td></td></tr><tr><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>					B	U	Z	Z	E	R		T	O	N	E				1	2	3	4	5								<div>CLR</div>			Select '2' as buzzer tone.								
		B	U	Z	Z	E	R		T	O	N	E																														
		1	2	3	4	5																																				
<table><tr><td></td><td>H</td><td>.</td><td>L</td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td></tr><tr><td></td><td>1</td><td>.</td><td>L</td><td>C</td><td>D</td><td>2</td><td>.</td><td>B</td><td>U</td><td>Z</td><td>Z</td><td>E</td><td>R</td></tr></table>				H	.	L	P	A	R	A	M	E	T	E	R			1	.	L	C	D	2	.	B	U	Z	Z	E	R	<div>CLR</div> <div>STEP</div> <div>▼</div>			Loader parameter menu.								
	H	.	L	P	A	R	A	M	E	T	E	R																														
	1	.	L	C	D	2	.	B	U	Z	Z	E	R																													
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>L</td><td>O</td><td>A</td><td>D</td><td></td><td>N</td><td>O</td><td>T</td><td></td><td></td><td>M</td><td>O</td><td>0</td><td>0</td></tr></table>			0	0	0	0	0										L	O	A	D		N	O	T			M	O	0	0												
0	0	0	0	0																																						
L	O	A	D		N	O	T			M	O	0	0																													





1) The buzzer tone is set default automatically when the power is off or the buzzer is on/off.



#### 4.50 PLC STATION / BAUD RATE SETTING (K10S/K30S/K60S)

Available mode			Note	
RUN/PAU	PGM	DEB	Only for K10S/K30S/K60S.  Default :    PLC Station : 00h  Baud Rate : 9600 bps	
×		×		
Set PLC station number and baud rate.				
Loader display			Key operations	
<div>00000</div>			PRM	
<div>PLC PARAMETER</div> <div>1. PASSWORD</div>			STEP▼STEP▼	
<div>PLC PARAMETER</div> <div>3. PLC STATION</div>			ENTSTEP▼STEP▲	
<div>PLC STATION</div> <div>h00</div>			ENT	
<div>PLC PARAMETER</div> <div>4. BAUD RATE</div>			ENTSTEP▼	
<div>BAUD RATE</div> <div>6. 09600</div>			ENTCLR	
<div>00000</div>				

## 4.51 BAUD RATE SETTING

Available mode			Note
RUN/PAU	PGM	DEB	
x		x	
Determine the internal CNET communication baud rate.			Only for GK5 / K200S.
Loader display	Key operations	Description	
<div>PLC PARAMETER</div> <div>1 . LATCH AREA</div>	PRM	Press 	
			
<div>PLC PARAMETER</div> <div>18 . COMMUNICATION</div>	ENT		
<div>PLC STATION</div> <div>NUMBER : 00</div>	ENT		
<div>BAUD RATE</div> <div>7 : 128000bps</div>		Press 	
<div>BAUD RATE</div> <div>0 : 9600bps</div>	ENT	Baud rate is set to 9600.	
<div>PLC PARAMETER</div> <div>18 . COMMUNICATION</div>			

## 4.52 LINK PARAMETER SETTING

Available mode			Note											
RUN/PAU	PGM	DEB												
×		×												
Set Data link parameters.			Applied for H series.											
Loader display	Key operations	Description												
<table><tr><td>PLC</td><td>PARAMETER</td><td></td><td></td><td></td><td></td></tr><tr><td>1.</td><td>LATCH</td><td>AREA</td><td></td><td></td><td></td></tr></table>	PLC	PARAMETER					1.	LATCH	AREA				<div>PRM</div> <div>STEP ▼ ×4</div>	Press <div>STEP ▼</div> key 4 times.
PLC	PARAMETER													
1.	LATCH	AREA												
<table><tr><td>PLC</td><td>PARAMETER</td><td></td><td></td><td></td><td></td></tr><tr><td>5.</td><td>LINK</td><td>PRM</td><td></td><td></td><td></td></tr></table>	PLC	PARAMETER					5.	LINK	PRM				<div>ENT</div>	
PLC	PARAMETER													
5.	LINK	PRM												
<table><tr><td>LINK</td><td>PRM</td><td>#01</td><td></td><td></td><td></td></tr><tr><td>ST:</td><td>***</td><td>TYPE:</td><td>*</td><td></td><td></td></tr></table>	LINK	PRM	#01				ST:	***	TYPE:	*			<div>1</div> <div>ENT</div> <div>1</div>	Type in station number and station type.
LINK	PRM	#01												
ST:	***	TYPE:	*											
<table><tr><td>LINK</td><td>PRM</td><td>#01</td><td></td><td></td><td></td></tr><tr><td>ST:</td><td>h01</td><td>TYPE:</td><td>1</td><td></td><td></td></tr></table>	LINK	PRM	#01				ST:	h01	TYPE:	1			<div>ENT</div>	Station number is 1. Type in 1(remote output) as station type.
LINK	PRM	#01												
ST:	h01	TYPE:	1											
<table><tr><td>LINK</td><td>PRM</td><td>#01</td><td></td><td></td><td></td></tr><tr><td>TX:</td><td>*****</td><td>N:</td><td>**</td><td></td><td></td></tr></table>	LINK	PRM	#01				TX:	*****	N:	**			<div>D</div> <div>1</div> <div>ENT</div>	Set read start word.
LINK	PRM	#01												
TX:	*****	N:	**											
<table><tr><td>LINK</td><td>PRM</td><td>#01</td><td></td><td></td><td></td></tr><tr><td>RX:</td><td>D0001</td><td>N:</td><td>**</td><td></td><td></td></tr></table>	LINK	PRM	#01				RX:	D0001	N:	**			<div>4</div> <div>ENT</div>	Set word numbers to read in. (Read 4 Word from D0001)
LINK	PRM	#01												
RX:	D0001	N:	**											
<table><tr><td>LINK</td><td>PRM</td><td>#03</td><td></td><td></td><td></td></tr><tr><td>ST:</td><td>***</td><td>TYPE:</td><td>*</td><td></td><td></td></tr></table>	LINK	PRM	#03				ST:	***	TYPE:	*				
LINK	PRM	#03												
ST:	***	TYPE:	*											

## 4.53 HS LINK PARAMETER SETTING

Available mode			Note
RUN/PAU	PGM	DEB	
x		x	
Set HS link parameters.			For GK3/GK4/GK5 / K200S/K300S/K1000S.
Loader display	Key operations	Description	
<div>PLC PARAMETER</div> <div>1. LATCH AREA</div>	<div>PRM</div> <div>STEP ▼ ×5</div>	Press STEP ▼ 5 times.	
<div>PLC PARAMETER</div> <div>6. HS LINK PRM</div>	<div>ENT</div>		
<div>HS LINK PRM</div> <div>HS LINK 1</div>	<div>STEP ▼ or STEP ▲</div> <div>ENT</div>	Set the kind of HS link. K200S : 1 ~ 2 K300S : 1 ~ 2 K1000S : 1 ~ 4	
<div>HS LINK 1</div> <div>UNIT : MKS Fnet</div>	<div>STEP ▼ or STEP ▲</div> <div>ENT</div>	Set HS link unit type. K200S, K300S, K1000S : Fnet	
<div>HS LINK 1 F</div> <div>SLOT : 0 SF_ST : 00</div>	<div>1 ENT</div> <div>2</div>	Set slot number and self station number. Slot : 0 ~ 7 Self-ST : 0 ~ 63	
<div>HS LINK 1 F</div> <div>SLOT : 1 SF_ST : 02</div>	<div>ENT</div>		

Loader display	Key operations	
<div>H S L 1 F 1 0 2 # 0 0</div> <div>S T : * * T Y P E : * *</div>	<div>1 ENT</div> <div>STEP ▼</div>	Set the station number( 0 ~ 63) and link type. Type : ST No. is equal with self station No. LS (Only local send is available) ST No. is not equal with self station No. LS : Local Send (Only TX) LR : Local Receive (Only RX) RS : Remote Send (TX/RX) RR : Remote Receive (TX/RX)
<div>H S L 1 F 1 0 2 # 0 0</div> <div>S T : 0 1 T Y P E : L R</div>	<div>ENT</div>	
<div>H S L 1 F 1 0 2 # 0 0</div> <div>I D : 0 0 C Y : 2 0 m s</div>	<div>1 ENT</div> <div>STEP ▼</div>	
<div>H S L 1 F 1 0 2 # 0 0</div> <div>I D : 0 1 C Y : 5 0 m s</div>	<div>ENT</div>	Define ID, CY ID : Data Block ID (0~31) CY : Set send/receive cycle 20ms, 50ms, 100ms, 200ms, 500ms, 1s, 5s, 10s
<div>H S L 1 F 1 0 2 # 0 0</div> <div>R X : * * * * * N : * * * *</div>	<div>D 1 0 ENT</div> <div>4</div>	
<div>H S L 1 F 1 0 2 # 0 0</div> <div>R X : D 0 0 1 0 N : 0 0 4</div>	<div>ENT</div>	
<div>H S L 1 F 1 0 2 # 0 1</div> <div>S T : * * T Y P E : * *</div>		

#### Note

You can set the 'HS link parameter' only when 'HS link enable' is set at 'No'.

## 4.54 LINK CONTROL SETTING

Available mode			Note
RUN/PAU	PGM	DEB	
x		x	
Set link-related parameter.			For K250H/K500H/K1000H.
Loader display	Key operations	Description	
<div>PLC PARAMETER</div> <div>1 . LATCH AREA</div>	<div>PRM</div> <div>STEP ▼ ×6</div>	Press STEP ▼ key 6 times.	
<div>PLC PARAMETER</div> <div>7 . LINK CONTROL</div>	<div>ENT</div>		
<div>LINK CONTROL</div> <div>SYNC ENABLE : NO</div>	<div>ON 8</div>		
<div>LINK CONTROL</div> <div>SYNC ENABLE : YES</div>	<div>ENT</div>	Synchronize the PLC scan with remote send/receive.	
<div>LINK CONTROL</div> <div>WRITE PROT : NO</div>	<div>ON 8</div>		
<div>LINK CONTROL</div> <div>WRITE PROT : YES</div>	<div>ENT</div>	Set protection not to write data from host PC to PLC	



Loader display	Key operations	Description
<div>LINK CONTROL</div> <div>ACCESS PROT : NO</div>	ON 8	Enable the protection that prohibits reading/writing PLC data for host PC.
<div>LINK CONTROL</div> <div>ACCESS PROT : YES</div>	ENT	
<div>LINK CONTROL</div> <div>LINK ENABLE : NO</div>	ON 8	Execute HS data link.
<div>LINK CONTROL</div> <div>LINK ENABLE : YES</div>	ENT	
<div>LINK CONTROL</div> <div>SELF_ST. NO. : h00</div>	1 ENT	Define self station number.

#### 4.55 HS LINK ENABLE SETTING

Available mode				Note																																
RUN/PAU	PGM	DEB																																		
×		×																																		
Define High Speed Link parameter.				For GK3/GK4/GK5 / K200S/K300S/K1000S																																
Loader display			Key operations		Description																															
<table><tr><td></td><td>P</td><td>L</td><td>C</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td></tr><tr><td>1</td><td>.</td><td>L</td><td>A</td><td>T</td><td>C</td><td>H</td><td></td><td>A</td><td>R</td><td>E</td><td>A</td><td></td><td></td><td></td></tr></table>				P	L	C		P	A	R	A	M	E	T	E	R		1	.	L	A	T	C	H		A	R	E	A				<div>PRM</div>		Press <div>STEP ▼</div> key 6 times.	
	P	L	C		P	A	R	A	M	E	T	E	R																							
1	.	L	A	T	C	H		A	R	E	A																									
<table><tr><td></td><td>P</td><td>L</td><td>C</td><td></td><td>P</td><td>A</td><td>R</td><td>A</td><td>M</td><td>E</td><td>T</td><td>E</td><td>R</td><td></td></tr><tr><td>7</td><td>.</td><td>H</td><td>S</td><td></td><td>L</td><td>I</td><td>N</td><td>K</td><td></td><td>E</td><td>N</td><td>A</td><td>B</td><td>L</td><td>E</td></tr></table>				P	L	C		P	A	R	A	M	E	T	E	R		7	.	H	S		L	I	N	K		E	N	A	B	L	E	<div>STEP ▼</div> × 6		
	P	L	C		P	A	R	A	M	E	T	E	R																							
7	.	H	S		L	I	N	K		E	N	A	B	L	E																					
<table><tr><td></td><td>H</td><td>S</td><td></td><td>L</td><td>I</td><td>N</td><td>K</td><td></td><td>E</td><td>N</td><td>A</td><td>B</td><td>L</td><td>E</td><td></td></tr><tr><td>H</td><td>S</td><td>L</td><td>1</td><td></td><td>E</td><td>N</td><td>A</td><td>B</td><td>L</td><td>E</td><td></td><td>:</td><td>N</td><td>O</td><td></td></tr></table>				H	S		L	I	N	K		E	N	A	B	L	E		H	S	L	1		E	N	A	B	L	E		:	N	O		<div>ENT</div>	
	H	S		L	I	N	K		E	N	A	B	L	E																						
H	S	L	1		E	N	A	B	L	E		:	N	O																						
<table><tr><td></td><td>H</td><td>S</td><td></td><td>L</td><td>I</td><td>N</td><td>K</td><td></td><td>E</td><td>N</td><td>A</td><td>B</td><td>L</td><td>E</td><td></td></tr><tr><td>H</td><td>S</td><td>L</td><td>1</td><td></td><td>E</td><td>N</td><td>A</td><td>B</td><td>L</td><td>E</td><td></td><td>:</td><td>Y</td><td>E</td><td>S</td></tr></table>				H	S		L	I	N	K		E	N	A	B	L	E		H	S	L	1		E	N	A	B	L	E		:	Y	E	S	<div>ON 8</div>	
	H	S		L	I	N	K		E	N	A	B	L	E																						
H	S	L	1		E	N	A	B	L	E		:	Y	E	S																					
			<div>ENT</div>		Enable HS Link. K200S : HSL1 ~ 2 K300S : HSL1 ~ 2 K1000S : HSL1 ~ 4																															

## 4.56 DEBUG OUTPUT

Available mode			Note
RUN/PAU	PGM	DEB	
×		×	
Define whether enable output or not in debug mode.			For GK3/GK4/GK5 / K200S/K300S/K1000S
Loader display	Key operations	Description	
<div>PLC PARAMETER</div> <div>1. LATCH AREA</div>	<div>PRM</div> <div>STEP ▼ ×7</div>	Press <div>STEP ▼</div> key 7 times.	
<div>PLC PARAMETER</div> <div>8. DEBUG OUTPUT</div>	<div>ENT</div>		
<div>DEBUG OUTPUT</div> <div>OUTPUT: NO</div>	<div>ON 8</div>		
<div>DEBUG OUTPUT</div> <div>OUTPUT: YES</div>	<div>ENT</div>	Enable output in debug mode.	
<div>PLC PARAMETER</div> <div>9. INTERRUPT</div>			

## 4.57 TIMER SETTING

Available mode			Note		
RUN/PAU	PGM	DEB			
x		x			
Define 100ms timer area.					
Loader display	Key operations		Description		
<div>PLC PARAMETER</div> <div>1.LATCH AREA</div>	<div>PRM</div> <div>STEP ▲ ×4</div>		<div>Press STEP ▲ key 4 times.</div> <div>LCD shows like following in H Series.</div> <div>PLC PARAMETER</div> <div>8.TIMER SET</div>		
<div>PLC PARAMETER</div> <div>15.TIMER SET</div>	<div>ENT</div>				
<div>100m TIMER SET</div> <div>T000 - T191</div>	<div>2 0 0</div>				
<div>100m TIMER SET</div> <div>T000 - T200</div>	<div>ENT</div>		<div>100ms timer for T000 ~ T200.</div> <div>10ms Timer for T201 ~ T255.</div>		
<div>PLC PARAMETER</div> <div>16.REMOTE ACCESS</div>					

## 4.58 INTERRUPT SETTING (1)

Available mode			Note
RUN/PAU	PGM	DEB	
×		×	
Set interrupt priority and interrupt cycle.			Except K200S/K300S/K1000S.
Loader display	Key operations	Description	
<div>PLC PARAMETER</div> <div>1. LATCH AREA</div>	<div>PRM</div> <div>STEP ▼ ×8</div>	Press STEP ▼ key 8 times.	
<div>PLC PARAMETER</div> <div>9. INTERRUPT</div>	<div>ENT</div>	Define the priority between TDI and PDI.	
<div>INTERRUPT</div> <div>TDI &lt; PDI</div>	<div>STEP ▼ or STEP ▲</div>		
<div>INTERRUPT NO</div> <div>00000ms TDI</div>	<div>SHFT ON 8</div>	Enable TDI function	
<div>INTERRUPT YES</div> <div>00000ms TDI</div>	<div>1 0 ENT</div>		
<div>INTERRUPT</div> <div>PDI ? NO</div>	<div>SHFT ON 8</div>	Set TDI cycle at 10ms	
<div>INTERRUPT</div> <div>PDI ? YES</div>	<div>ENT</div>	PDI enable.	

Loader display	Key operations	Description																																																								
<table><tr><td></td><td>I</td><td>N</td><td>T</td><td>E</td><td>R</td><td>R</td><td>U</td><td>P</td><td>T</td><td></td><td>Y</td><td>E</td><td>S</td></tr><tr><td></td><td>P</td><td>0</td><td>0</td><td></td><td>I</td><td>N</td><td>T</td><td>0</td><td>0</td><td>:</td><td>O</td><td>F</td><td>F</td></tr></table> <table><tr><td></td><td>I</td><td>N</td><td>T</td><td>E</td><td>R</td><td>R</td><td>U</td><td>P</td><td>T</td><td></td><td>Y</td><td>E</td><td>S</td></tr><tr><td></td><td>P</td><td>0</td><td>2</td><td></td><td>I</td><td>N</td><td>T</td><td>0</td><td>0</td><td>:</td><td>O</td><td>N</td><td></td></tr></table>		I	N	T	E	R	R	U	P	T		Y	E	S		P	0	0		I	N	T	0	0	:	O	F	F		I	N	T	E	R	R	U	P	T		Y	E	S		P	0	2		I	N	T	0	0	:	O	N		<div>2</div> <div>SHIFT</div> <div>ON 8</div>	<p>Execute PDI when P020 bit turns on.</p>
	I	N	T	E	R	R	U	P	T		Y	E	S																																													
	P	0	0		I	N	T	0	0	:	O	F	F																																													
	I	N	T	E	R	R	U	P	T		Y	E	S																																													
	P	0	2		I	N	T	0	0	:	O	N																																														

## 4.59 INTERRUPT SETTING (2)

Available mode			Note	
RUN/PAU	PGM	DEB		
x		x		
Set interrupt priority and interrupt cycle			For GK3/GK4/GK5 / K200S/K300S/K1000S	
Loader display		Key operations	Description	
<div>PLC PARAMETER</div> <div>1. LATCH AREA</div>		<div>PRM</div> <div>STEP ▼ ×8</div>	Press STEP ▼ key 8 times.	
<div>PLC PARAMETER</div> <div>9. INTERRUPT</div>		<div>ENT</div>		
<div>#00 1. TDI 2. INT</div> <div>No Setting!</div>		<div>1 ENT</div>		
<div>#00 1. TDI 2. INT</div> <div>TDI 00 00 01 * 10mS</div>		<div>2 ENT</div>	Give priority on TDI. And set TDI at 20ms.	
<div>#01 1. TDI 2. INT</div> <div>No Setting!</div>		<div>2</div>		
<div>#00 1. TDI 2. INT</div> <div>INT 00:ST 00:OFF</div>		<div>STEP ▼ ENT</div>	Give priority on INT.	

## 4.60 FORCE ON/OFF SETTING

Available mode			Note
RUN/PAU	PGM	DEB	
x		x	
Forced On/Off set on P device.			For GK3/GK4/GK5 / K200S/K300S/K1000S.
Loader display	Key operations	Description	
<div>PLC PARAMETER</div> <div>1 . LATCH AREA</div>	<div>PRM</div> <div>STEP ▼ ×10</div>	Press STEP ▼ key 10 times.	
<div>PLC PARAMETER</div> <div>11 . FORCE ON / OFF</div>	<div>ENT</div>		
<div>FORCE ON / OFF</div> <div>P0000 F : OFF D : 0</div>	<div>TEST 1 A</div> <div>ENT</div>		
<div>FORCE ON / OFF</div> <div>P001A F : OFF D : 0</div>	<div>ON 8 1</div>	Designate P001A .	
<div>FORCE ON / OFF</div> <div>P001A F : ON D : 1</div>	<div>STEP ▼</div>	Set(1) P001A.	
<div>FORCE ON / OFF</div> <div>P001B F : OFF D : 0</div>			



#### 4.61 FORCED ON/OFF ENABLE SETTING

Available mode			Note
RUN/PAU	PGM	DEB	
x		x	
Allow forced On/Off on P device.			For GK3/GK4/GK5 / K200S/K300S/K1000S.
Loader display		Key operations	Description
<div>PLC PARAMETER</div> <div>1. LATCH AREA</div>		<div>PRM</div> <div>STEP ▼ ×11</div>	<div>Press STEP ▼ key 11 times.</div>
<div>PLC PARAMETER</div> <div>12. FORCE ENABLE</div>		<div>ENT</div>	
<div>FORCE ENABLE</div> <div>ENABLE : NO</div>		<div>ON 8</div>	<div>Permit forced On/Off.</div>
<div>FORCE ENABLE</div> <div>ENABLE : YES</div>		<div>ENT</div>	
<div>PLC PARAMETER</div> <div>13. REMOTE CONNET</div>			

## 4.62 REMOTE CONNECTION SETTING

Available mode			Note
RUN/PAU	PGM	DEB	
x		x	
Remote connect by 1stage or 2stage.			For GK3/GK4/GK5 / K200S/K300S/K1000S.
Loader display	Key operations	Description	
<div>PLC PARAMETER</div> <div>1. LATCH AREA</div>	<div>PRM</div> <div>STEP ▼ × 12</div>	Press STEP ▼ key 12 times.	
<div>PLC PARAMETER</div> <div>13. REMOTE CONNECT</div>	<div>ENT</div>		
<div>REMOTE CONNECT</div> <div>REMOTE: 1 STAGE</div>	<div>STEP ▼ or STEP ▲</div> <div>ENT</div>	Select stage 1 or 2 using STEP ▼ STEP ▲ .	
<div>REMOTE CONNECT</div> <div>TYPE: MKS Fnet</div>	<div>STEP ▼ or STEP ▲</div> <div>ENT</div>	Select Mnet or Fnet using STEP ▼ STEP ▲ .	
<div>REMOTE CONNECT</div> <div>SLOT: 0</div>	<div>1 ENT</div>	Select slot 1.	
<div>REMOTE CONNECT</div> <div>STATION: 00</div>	<div>3 ENT</div>	Select station 3.	

## 4.63 REMOTE DISCONNECTION SETTING

Available mode			Note
RUN/PAU	PGM	DEB	
x		x	
Disconnect remote connection.			For GK3/GK4/GK5 / K200S/K300S/K1000S.
Loader display	Key operations	Description	
<div>PLC PARAMETER</div> <div>1. LATCH AREA</div>	<div>PRM</div> <div>STEP ▼ ×13</div>	Press <div>STEP ▼</div> key 13 times.	
<div>PLC PARAMETER</div> <div>14. REMOTE DISCON</div>	<div>ENT</div>	Disconnect the remote connection.	
<div>REMOTE DISCON</div> <div>1. YES 2. NO</div>	<div>1</div>		

#### 4.64 PLC INFORMATION VIEW

Available mode			Note
RUN/PAU	PGM	DEB	
×		×	
Shows the PLC kind and the flash memory kind.			For GK3/GK4/GK5 / K300S/K1000S (Except K200S)
Loader display	Key operations	Description	
<div>1. INFORMATION</div> <div>2. EXECUTION</div> <div>PLC :        M K S :</div> <div>F _ M E M :    6 4 K B y t e</div>	<div>1    ENT</div> <div>CLR   CLR</div>	<div>1. PLC information</div> <div>2. EPROM check, write, verify, read.</div> <div>PLC kind and flash memory kind.</div> <div>You can exit by pressing CLR key twice.</div>	

#### 4.65 PROGRAM INSERT/DELETE DURING RUN

Available mode			Note																														
RUN/PAU	PGM	DEB																															
x		x																															
Edit user program in Run mode.																																	
Loader display		Key operations	Description																														
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>4</td><td></td><td></td><td></td><td></td><td></td><td>M</td><td>O</td><td>V</td><td>P</td></tr><tr><td>&lt;</td><td>2</td><td>&gt;</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>D</td><td>0</td><td>0</td><td>0</td></tr></table>		0	0	0	0	4						M	O	V	P	<	2	>								D	0	0	0	<div>INST</div>	<p>Press <div>INST</div> key at the end of the step you want to insert.</p>		
0	0	0	0	4						M	O	V	P																				
<	2	>								D	0	0	0																				
<table><tr><td>0</td><td>0</td><td>0</td><td>0</td><td>1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>F</td><td>U</td><td>N</td><td>(</td><td>0</td><td>8</td><td>1</td><td>)</td><td></td><td></td><td></td><td>M</td><td>O</td><td>V</td><td>P</td></tr></table>		0	0	0	0	1										F	U	N	(	0	8	1	)				M	O	V	P	<div>DELT</div>	<p>Press <div>DELT</div> key at the end of the step you want to delete.</p>	
0	0	0	0	1																													
F	U	N	(	0	8	1	)				M	O	V	P																			
<table><tr><td>*</td><td>P</td><td>L</td><td>C</td><td></td><td>R</td><td>U</td><td>N</td><td></td><td>M</td><td>O</td><td>D</td><td>E</td><td>*</td></tr><tr><td>*</td><td>*</td><td>C</td><td>h</td><td>a</td><td>n</td><td>g</td><td>e</td><td>?</td><td>&lt;</td><td>E</td><td>N</td><td>T</td><td>&gt;</td><td>*</td><td>*</td></tr></table>		*	P	L	C		R	U	N		M	O	D	E	*	*	*	C	h	a	n	g	e	?	<	E	N	T	>	*	*	<div>ENT</div>	<p>Program insert/delete during run.</p> <p>Pressing <div>INST</div> / <div>DELT</div> key, this message appears. In order to cancel, press <div>CLR</div> key.</p>
*	P	L	C		R	U	N		M	O	D	E	*																				
*	*	C	h	a	n	g	e	?	<	E	N	T	>	*	*																		
<table><tr><td>*</td><td>P</td><td>L</td><td>C</td><td></td><td>R</td><td>U</td><td>N</td><td></td><td>M</td><td>O</td><td>D</td><td>E</td><td>*</td></tr><tr><td>*</td><td>*</td><td>S</td><td>u</td><td>r</td><td>e</td><td>?</td><td></td><td>&lt;</td><td>E</td><td>N</td><td>T</td><td>&gt;</td><td>*</td><td>*</td></tr></table>		*	P	L	C		R	U	N		M	O	D	E	*	*	*	S	u	r	e	?		<	E	N	T	>	*	*	<div>ENT</div>	<p>Pressing <div>ENT</div> key, this message appears.</p> <p>In order to cancel, press <div>CLR</div> key.</p> <p>Pressing <div>ENT</div> key once more, the insert/delete complete.</p>	
*	P	L	C		R	U	N		M	O	D	E	*																				
*	*	S	u	r	e	?		<	E	N	T	>	*	*																			

11/11/2011

DELT

SHIFT

W{AUX



**S**

0	0	1	2	3												
												0	0	4	5	6



0	0	1	2	3		R	U	N		M	O	D	E		
											0	0	4	5	6

## 4.66 PDI SLOT SET

Available mode			Note
RUN/PAU	PGM	DEB	
×		×	
Process driven interrupt setting.			Only for K200S.
Loader display	Key operations	Description	
<div>PLC PARAMETER</div> <div>1. LATCH AREA</div>	<div>PRM</div>	<div>Press  key 9 times.</div>	
	<div> ×9</div>		
<div>PLC PARAMETER</div> <div>10. PDI SLOT SET</div>	<div>ENT</div>	<div>Define slot number with the number keys. (0 ~ 11 is available)</div>	
<div>PDI SLOT SET</div> <div>SLOT : 00</div>	<div>0 ~ 9</div> <div>ENT</div>		

## 4.67 CNET Communication

Available mode			Note
RUN/PAU	PGM	DEB	
x		x	
CNET information setting.			For GK3/GK4/GK5 / K200S/K300S/K1000S.
Loader display	Key operations	Description	
<div>PLC PARAMETER</div> <div>1. LATCH AREA</div>	<div>PRM</div> <div>STEP ▲</div>	Press STEP ▲ key.	
<div>PLC PARAMETER</div> <div>18. COMMUNICATION</div>	<div>ENT</div>		
<div>PLC STATION</div> <div>NUMBER: 00</div>	<div>0 ~ 9</div> <div>ENT</div>	Define PLC station number. (0 ~ 31 is available)	
<div>BAUD RATE</div> <div>1: 19200bps</div>	<div>STEP ▲ or STEP ▼</div> <div>ENT</div>	Define baud rate by step key. (0 ~ 2 is available)	
<div>MASTER/SLAVE</div> <div>0: MASTER SET</div>	<div>STEP ▲ or STEP ▼</div> <div>ENT</div>	Define master/slave by step key. (0 ~ 1 is available)	

#### 4.68 MASTER - K FUNCTION COMPARISON TABLE

No.	FUNCTIONS		PRODUCT			
			K10S/K30S/ K60S/K100S	K200S	K300S	K1000S
1	Init. screen	EPROM Write/Program				
		Product and Version Display				
2	Back- light	On connecting				
		Turn off after 10 minute since last key operation.				
3		Mode Change				
4		Password Registration				
5		Password Change and Clear				
6		Program Input and Modification				
7		Program Read				
8		Program Insert				
9		Program Delete				
10		Program Check			/	/
11		Device Search(Bit)				
12		Instruction Search				
13		Step Monitor				
14		Bit Monitor				
15		Word Monitor				
16		Bit Current Value Change				
17		Word Forced On/Off				
18		Word Current Value Change				
19		Timer/Counter Input				
20		Timer/Counter Monitor				
21		Timer/Counter Reference Change				



No.	FUNCTIONS	PRODUCT			
		K10S/K30S/ K60S/K100S	K200S	K300S	K1000S
22	Timer/Counter Forced On/Off			/	/
23	Change Timer/Counter Current Value				
24	HSC Data Setting			/	/
25	HSC Default PRM Write			/	/
26	Latch Area Setting	/			
27	W.D.T Setting	/	/		
28	Error Mode Setting	/	/		
29	I/O Table Setting	/	/		
30	Link Parameter	/	/		
31	Link Control	/			
32	Timer Set	/	/		
33	Interrupt	/	/		
34	Baud Rate		/		
35	I/O Table Monitor	/			
36	Default Parameter Write				
37	1 Step Run	/			
38	Step Break Run	/			
39	Scan Run	/			
40	Value Break Run	/			
41	Program Partial Clear				
42	Program Data Clear				
43	Block Data Change				
44	Block Move, Copy				
45	Program All Clear				

## CHAPTER 5 TROUBLESHOOTING

### 5.1 MASTER-K10/K60H/K200H (Indicacted on the F05 Word)

Error	Error Code	CPU Status	Cause	Corrective Action	K10	K60H	K200H	K250
OS ROM CHK.SUM. Error	10	Stop	Defection of operating ROM or check sum mismatch	Please contact service station.				
Memory Error	11	Stop	Fault of the internal system RAM	Please contact service station.				
Gate Array Error	12	Stop	Fault on the sequence instruction processing LSI	Please contact service station.				
24V Down Error	13	Stop	Abnormal 24V output of main, expansion and power unit	Exchange with spare unit or contact service station				
I/O Slot Error	14	Stop	Mounting or unmounting I/O units during run. Or Bad contact. I/O unit fault or expansion unit cable fault	Turn off the power and insert right and run again Change I/O unit or expansion cable				
WDT Over	20	Stop	Scan time exceeds the WDT time	Measure maximum scan time first. And then modify parameter or insert WDT command in program				
Parameter CHK.SUM. Error	21	Stop	Parametr is modified or check sum mismatching	Modify parameter				
Code Error	23	Stop	CPU is unable to compile the commands	Modify the wrong step or if it is under ROM dirve mode, replace the ROM				
Missing End Error	24	Stop	There is no 'END' in program.	Add 'END' command at the end of the program (Be aware of JMP-JME block)				
Missing RET Error	25	Stop	There is no 'RET' command at the end of the subroutine	Add 'RET' command at the end of the program (Be aware of JMP-JME block)				
Operation Error	26	Continue ( Stop)	There is a digit that is not 0 ~ 9 Exceeds the specified operand area	Modify the wrong step				
I/O Check Error	27	Continue	I/O unit information mismatches with the real I/O unit kind when the power is on or starting run	Modify parameter or rearrange I/O unit or change I/O unit				
Lower Battery Voltage	28	Continue	Back-up battery voltage is low	replace the battery				
Fuse (K250 Only)	29	Continue ( Stop)	input/output mixing, output unit fuse is blown	Certify the fuse LED, turn off the power and then replace the fuse				

## 5.2 MASTER-K500H/K1000H (Indicated on the F06 word)

Error	Error code	CPU Status	Cause	Corrective Action
Internal system error	H1001	Stop	Defection of operating ROM or H/W error	Please contact service station.
Memory Destroyed	H1002	Stop	Fault of the internal system RAM	Please contact service station.
Gate Array Destroyed	H1003	Stop	Fault on the sequence instruction processing LSI	Please contact service station.
Sub Rack Power Down Error	H1004	Stop	Expansion rack power down	Examine the power of expansion rack
I/O Slot Verify Error	H2001	Stop	Mounting or unmounting I/O units during run. Or Bad contact.  I/O unit fault or expansion unit cable fault	Turn off the power and insert right and run again Change I/O unit or expansion cable
Fuse Break Error	H2002	Continue (Stop)	input/output mixing, output unit fuse is blown	Certify the fuse LED, turn off the power and then replace the fuse
Special Card Interface Error	H2003	Stop	Error occurs during special card interfacing	Please contact service station.
WDT Over	H2004	Stop	Scan time exceeds the WDT time	Measure maximum scan time first. And then modify parameter or insert WDT command in program
Operation Error	H2005	Continue (Stop)	There is a digit that is not 0 ~ 9  Exceeds the specified operand area	Modify the parameter
Parameter CHK.SUM Error	H3001	Stop	Parameter is modified or check sum mismatching	Modify the parameter
Maximum I/O Over	H3002	Stop	Exceeds maximum 512 point by reserved I/O or mounted I/O unit	Modify the parameter or exchange the I/O unit with the less point one
Instruction Code Error	H3003	Stop	CPU is unable to compile the commands	Modify the wrong step or if it is under ROM drive mode, replace the ROM
Missing End Program	H3004	Stop	There is no 'END' in program.	Add 'END' command at the end of the program (Be aware of JMP-JME block)
Missing RET Program	H3005	Stop	There is no 'RET' command at the end of the subroutine	Add 'RET' command at the end of the program (Be aware of JMP-JME block)
I/O Verify Error	H3006	Continue (Stop)	I/O unit reserved information is different from the real mounted I/O unit when the power is on or starting run	replace the battery
Battery Error	H3007	Continue	Back-up battery voltage is low	Please contact service station.

( ) can be modified in parameter

Error	Error code	CPU status	Cause	Corrective Action
DLU Interface Error	H4001	Continue	H/W error occurs during DLU card interfacing	Please contact service station.
DLU Parameter Setting Error	H4002	Continue	There is an error with your DLU parameter	Check DLU parameter area and set again.
DLU Failure	H4003	Continue	Error occurs during link executing	Check DLU card.
DLU Unit Self-Check Error	H4004	Continue	DLU self error check.	Check DLU card.
DLU Unit Parameter Error	H4005	Continue	DLU unit parameter error during run	Check DLU card.
RMU1 Interface Error	H4011	Continue	H/W error occurs interfacing with RMU1 card	Please contact service station.
RMU1 Parameter Setting Error	H4012	Continue	Wrong RMU1 parameter	Check RMU1 parameter area and set again.
RMU1 Failure	H4013	Continue	Error occurs during RMU1 link executing	Check RMU1 card.
RMU1 Unit Self-Check Error	H4014	Continue	Self-check error during run	Check RMU1 card.
RMU1 Unit Parameter Error	H4015	Continue	RMU1 unit parameter error during run	Check RMU1 card.
RMU2 Unit Interface Error	H4021	Continue	H/W error occurs interfacing with RMU2 card	Please contact service station.
RMU2 Parameter Setting Error	H4022	Continue	Wrong RMU2 parameter	Check RMU2 parameter area and set again.
RMU2 Failure	H4023	Continue	Error occurs during RMU2 link executing	Check RMU2 card.
RMU2 Unit Self-Check Error	H4024	Continue	RMU2 unit Self-check error	Check RMU2 card.
RMU2 Unit Parameter Error	H4025	Continue	RMU2 unit parameter error during run	Check RMU2 card.
RMU3 Unit Interface Error	H4031	Continue	H/W error occurs interfacing with RMU3 card	Please contact service station.

Error	Error code	CPU Status	Cause	Corrective Action
RMU3 Parameter Setting Error	H4032	Continue	Wrong RMU3 parameter	Check RMU3 parameter area and set again.
RMU3 Failure	H4033	Continue	Error occurs during RMU3 link executing	Check RMU3 card.
RMU3 Unit Self-Check Error	H4034	Continue	RMU3 unit Self-check error	Check RMU3 card.
RMU3 Unit Parameter Error	H4035	Continue	RMU3 unit parameter error during run	Check RMU3 card.

### 5.3 MASTER-K10S/K30S/K60S/K100S

Error	CPU Status	Cause	Corrective Action
I/O Error	Stop	Expansion unit mounting error	Certify the expansion unit and power Off On
Code Error	Stop	User program error	Modify the error step
Parameter Error	Stop	PLC program error	Modify the parameter
Missing End	Stop	There is no 'END' in user program	Insert 'End'
Missing RET	Stop	There is no 'RET' in user program	Insert 'RET'

#### 5.4 GLOFA-K3, K4 and K5 (Indicated on the F06 Word)

Error	Message	Error code	CPU Status	Cause	Corrective Action
OS ROM CHK.SUM. Error	OS ROM CHK.SUM. Error	10	Stop	Defection of operating ROM or check sum mismatch	Please contact service station.
Memory Error	Memory Error	11	Stop	Fault of the internal system RAM	Please contact service station.
Gate Array Error	Gate Array Error	12	Stop	Fault on the sequence instruction processing LSI	Please contact service station.
24V Down Error	24V Down Error	13	Stop	Abnormal 24V output of main, expansion and power unit	Exchange with spare unit or contact service station
I/O Slot Error	I/O Slot Error	14	Stop	Mounting or unmounting I/O units during run. Or Bad contact. I/O unit fault or expansion unit cable fault	Turn off the power and insert right and run again Change I/O unit or expansion cable
WDT Over	WDT Over	20	Stop	Scan time exceeds the WDT time	Measure maximum scan time first. And then modify parameter or insert WDT command in program
Parameter CHK.SUM. Error	Parameter CHK.SUM. Error	21	Stop	Parameter is modified or check sum mismatching	Modify the parameter
Code Error	Code Error	23	Stop	CPU is unable to compile the commands	Modify the wrong step or if it is under ROM dirve mode, replace the ROM
Missing End Error	Missing End Error	24	Stop	There is no 'END' in program.	Add 'END' command at the end of the program (Be aware of JMP-JME block)
Missing RET Error	Missing RET Error	25	Stop	There is no 'RET' command at the end of the subroutine	Add 'RET' command at the end of the program (Be aware of JMP-JME block)
Operation Error	Operation Error	26	Continue (Stop)	There is a digit that is not 0 ~ 9 Exceeds the specified operand area	Modify the error step
I/O Check Error	I/O Check Error	27	Continue	I/O unit information mismatches with the real I/O unit kind when the power is on or starting run	Modify parameter or rearrange I/O unit or change I/O unit
Lower Battery Voltage	Lower Battery Voltage	28	Continue	Back-up battery voltage is low	replace the battery
Fuse(K250 Only)	Fuse(K250 Only)	29	Continue (Stop)	input/output mixing, output unit fuse is blown	Certify the fuse LED, turn off the power and then replace the fuse

## 5.5 K200S, K300S, K1000S (Indicated on the F06 Word)

Error	Message	Error code	CPU Status	Cause	Corrective Action
Internal system error	System Error	0001h	Stop	Defection of operating ROM or H/W error	Please contact service station.
OS ROM Error	OS ROM Error	0002h	Stop	Defection on internal system ROM	Please contact service station.
OS RAM Error	OS RAM Error	0003h	Stop	Defection on internal system RAM	Please contact service station.
Data RAM Error	Data RAM Error	0004h	Stop	Defection on data RAM	Please contact service station.
Program RAM Error	PGM RAM Error	0005h	Stop	Defection on program RAM	Please contact service station.
Gate Array Error	G/A Error	0006h	Stop	Fault on the sequence instruction processing LSI	Please contact service station.
SUB Rack Power Down Error	SUB Power Error	0007h	Stop	Expansion rack power down	Examine the power of expansion rack
OS WDT Error	OS WDT Error	0008h	Stop	Watch Dog Timer Error	Power Off and On Contact service center
RAM Error	Common RAM Error	0009h	Stop	Public RAM I/F Error	Please contact service station.
Fuse Break Error	I/O Fuse Error	000Ah	Continue (Stop)	Input/output mixing or output unit fuse is blown	Certify the fuse LED, turn off the power and then replace the fuse
Instruction Code Error	OP Code Error	000Bh	Stop	CPU is unable to compile the commands	Please contact service station.
Flash Mem. Error ( )	User Mem Error	000Ch	Stop	Flash Memory access error	Certify the flash memory and replace
I/O Slot Error	I/O Slot Error	0010h	Stop	Mounting or unmounting I/O units during run. Or Bad contact. I/O unit fault or expansion unit cable fault	Turn off the power and insert right and run again Change I/O unit or expansion cable
Maximum I/O Over	MAX I/O Over	0011h	Stop	Mounted I/O unit exceeds the maximum I/O point	Replace the I/O unit

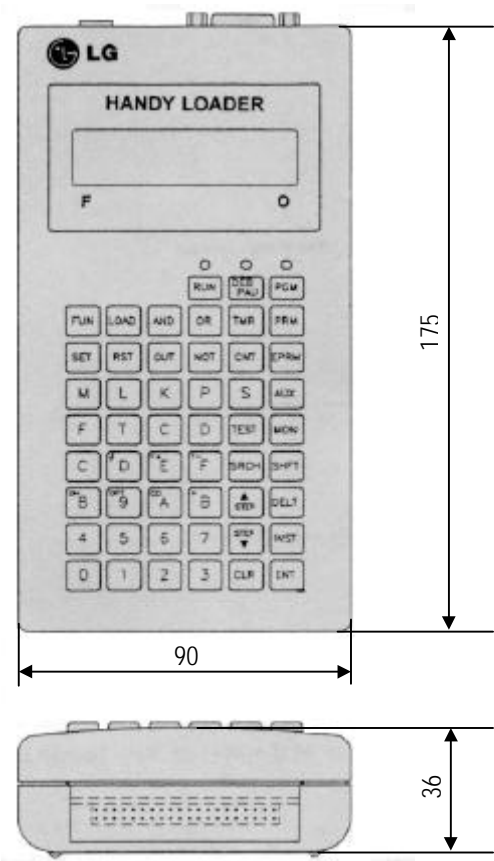
Error	Message	Error code	CPU Status	Cause	Corrective Action
Special Card Interface Error	Special I/F Error	0012h	Stop	Error occurs during special card interfacing	Please contact service station.
FMM 0 I/F Error	FMM 0 I/F Error	0013h	Stop	FMM 0 I/F Error	Please contact service station.
FMM 1 I/F Error	FMM 1 I/F Error	0014h	Stop	FMM 1 I/F Error	Please contact service station.
FMM 2 I/F Error	FMM 2 I/F Error	0015h	Stop	FMM 2 I/F Error	Please contact service station.
FMM 3 I/F Error	FMM 3 I/F Error	0016h	Stop	FMM 3 I/F Error	Please contact service station.
Parameter Error	Parameter Error	0020h	Stop	Parameter is modified or check sum mismatching	Modify the parameter
I/O Parameter Error	I/O PARA Error	0021h	Continue (Stop)	I/O unit information mismatches with the real I/O unit kind when the power is on or starting run	Modify parameter or rearrange I/O unit or change I/O unit
Maximum I/O Over	I/O PARA Over	0022h	Stop	Mounted I/O unit exceeds the maximum I/O point	Modify the parameter
FMM 0 Parameter Error	FMM 0 PARA Error	0023h	Stop	FMM 1 Parameter Error	Modify the parameter
FMM 1 Parameter Error	FMM 1 PARA Error	0024h	Stop	FMM 2 Parameter Error	Modify the parameter
FMM 2 Parameter Error	FMM 2 PARA Error	0025h	Stop	FMM 3 Parameter Error	Modify the parameter
FMM 3 Parameter Error	FMM 3 PARA Error	0026h	Stop	FMM 4 Parameter Error	Modify the parameter
Operation Error	Operation Error	0030h	Continue (Stop)	There is a digit that is not 0 ~ 9 Exceeds the specified operand area	Modify the wrong step
WDT Over	WDT Over Error	0031h	Stop	Scan time exceeds the WDT time	Measure maximum scan time first. And then modify parameter or insert WDT command in program
Run Program Check Error	PGM Change Error	0032h	Continue	Error occurs when modifying the user program during run (No SBRT, JME, END.).	Program modifying is not completed during run (JMP~JME, FOR~NEXT, CALLx, SBRTx.).
Program Check Error	PGM Check Error	0033h	Continue	Error has occurred during program check	Please contact service station.



Error	Message	Code	CPU Status	Cause	Corrective Action
Code Check Error	Code Check Error	0040h	Stop	CPU is unable to compile the commands	Modify the wrong step
Missing End Program	Miss End Error	0041h	Stop	There is no 'END' in program.	Add 'END' command at the end of the program (Be aware of JMP-JME block)
Missing RET Program	Miss RET Error	0042h	Stop	There is no 'RET' command at the end of the subroutine	Add 'RET' command at the end of the program (Be aware of JMP-JME block)
Missing SBRT Program	Miss SBRT Error	0043h	Stop	There is no SBRT command	Insert 'SBRT' at the end of the program (Be aware of JMP-JME block)
JMP ~ JME command error	JMP(E) Error	0044h	Stop	JMP ~ JME command error	Modify JMP ~ JME command in program
FOR ~ NEXT command error	FOR ~ NEXT Error	0045h	Stop	FOR ~ NEXT command error	Modify FOR ~ NEXT command in program
MCS ~ MCSCLR instruction Error	MCS ~ MCSCLR Error	0046h	Stop	MCS ~ MCSCLR command error	Modify MCS ~ MCSCLR command in program
MPUSH ~ MPOP command error	MPUSH ~ MPOP Error	0047h	Stop	MPUSH ~ MPOP command error	Modify MPUSH ~ MPOP command in program
Dual Coil Error	Dual Coil Error	0048h	Stop	Timer, counter is duplicated in program	Modify timer, counter
Syntax Error	Syntax Error	0049h	Stop	Wrong input condition or too many 'Load, And, (or)Load'	Program check and modify
Battery Error	Battery Error	0050h	Continue	Back-up battery voltage is low	Replace the battery

CHAPTER 6    DIMENSIONS

<KLD - 150S>



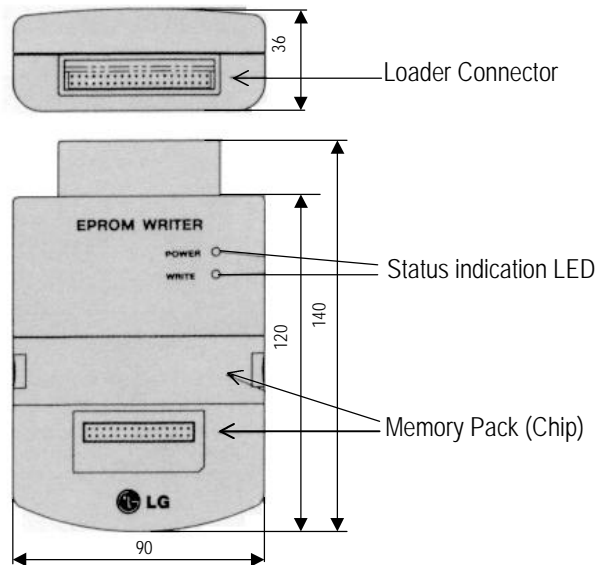
## CHAPTER 7 KEW - 150S DESCRIPTION & DIMENSIONS

### 1. Features

KEW - 150S EPROM Writer is a unit of MASTER-K Series and performs saving operations and off-line functions.

- 1) Performs EPROM read, write, blank check, verify operations.
- 2) Off-line functions (K10 ~ K200)
- 3) 'Write' LED turns on during EPROM writing.

### 2. Appearances and Names of Main Parts



### 3. Handling Precautions

Be sure to turn off the Handy Loader(KLD-150S) power before connecting KEW-150S.

### 4. Directions for Use

Refer to the EPROM usage part of KLD-150S User's Manual.

## [Appendix] Handy Loader Instruction Code Table

Function No.	0	1	2	3	4	5	6	7	8	9
<b>00x</b>	NOP	END	STC	CLC	RET	MPUSH	MLOAD	MPOP	STOP	CLE
<b>01x</b>	MCS	MCSCLR	JMP	JME	CALL	CALLP	SBRT	D	DNOT	
<b>02x</b>	INC	INCP	DINC	DINCP	DEC	DECP	DDEC	DDECP	LD=	LDD=
<b>03x</b>	ROL	ROLP	DROL	DROLP	ROR	RORP	DROR	DRORP	LD>	LDD>
<b>04x</b>	RCL	RCLP	DRCL	DRCLP	RCR	RCRP	DRCR	DRCRP	LD<	LDD<
<b>05x</b>	CMP	CMPP	DCMP	DCMPP	TCMP	TCMPP	DTCMP	DTCMPP	LD>=	LDD>=
<b>06x</b>	BCD	BCDP	DBCD	DBCDP	BIN	BINP	DBIN	DBINP	LD<=	LDD<=
<b>07x</b>	WSFT	WSFTP	MULS	MULSP	BSFT	BSFTP	DMULS	DMULSP	LD<>	LDD<>
<b>08x</b>	MOV	MOVP	DMOV	DMOVP	CMOV	CMOVP	DCMOV	DCMOVP	DIVS	DIVSP
<b>09x</b>	GMOV	GMOVP	FOMV	FOMVP	AND=	ANDD=	AND>	ANDD>	AND<	ANDD<
<b>10X</b>	BMOV	BMOVP	XCHG	XCHGP	DXCHG	DXCHGP	AND>=	ANDD>=	AND<=	ANDD<=
<b>11X</b>	ADD	ADDP	DADD	DADDP	SUB	SUBP	DSUB	DSUBP	AND<>	ANDD<>
<b>12X</b>	MUL	MULP	DMUL	DMULP	DIV	DIVP	DDIV	DDIVP	DDIVS	DDIVSP
<b>13X</b>	ADDB	ADDBP	DADDB	DADDBP	SUBB	SUBBP	DSUBB	DSUBBP	PIDTUN	PIDCAL
<b>14X</b>	MULB	MULBP	DMULB	DMULBP	DIVB	DIVBP	DDIVB	DDIVBP		
<b>15X</b>	WAND	WANDP	DWAND	DWANDP	WOR	WORP	DWOR	DWORP	RECV	SEND
<b>16X</b>	WXOR	WXORP	DWXOR	DWXORP	WXNR	WXNRP	DWXNR	DWXNRP	RCV	SND
<b>17X</b>	BSUM	BSUMP	DBSUM	DBSUMP	SEG	SEGP	ENCO	ENCOP	DECO	DECOP
<b>18X</b>	FILR	FILRP	DFILR	DFILRP	FILW	FILWP	DFILW	DFILWP	OR=	ORD=
<b>19X</b>	ASC	ASCP	UNI	UNIP	DIS	DISP	OR>	ORD>	OR<	ORD<
<b>20X</b>	IORF	IORFP	WDT	WDTP	FALS	DUTY	FOR	NEXT	OUTOFF	
<b>21X</b>	HSCNT	DIN	DINP	DOUT	DOUTP	HSC	OR>=	ORD>=	OR<=	ORD<=
<b>22X</b>	BREAK	EI	DI	BSET	BRST	IRET	TDINT	INT	OR<>	ORD<>
<b>23X</b>	GET	GETP	RGET	RPUT	PUT	PUTP	BOUT	SR	EI	DI
<b>24X</b>	NEG	NEGP	DNEG	DNEGP	READ	WRITE	CONN	STATUS	BLD	BLDN
<b>25X</b>	BAND	BANDN	BOR	BORN						

### Caution

- : Valid only for K1000S, K300S, K200S Series
- : Valid only for K10S, K10S1, K30S, K60S Series
- : Valid only for K200S B/C Type
- : Valid only for K10S, K10S1, K30S, K60S, K200S C Type