MITSUBISHI

PROGRAMMABLE CONTROLLER

MELSEC-A

User's Manual

Built-in Ladder Monitor Function Memorry Cassette type A7GT-MCA 0/256/512/768 K-LD

INTRODUCTION

Thank you for choosing the Mitsubishi MELSEC-A Series of General Pur pose Programmable Controllers Please read this manual carefully so that the equipment is used to its optimum A copy of this manual should be forwarded to the end User

1. GENERAL DESCRIPTION

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This user's manual describes the installation procedure for the A7GT-MCA0/256/512/768 K-LD Built-In Ladder Monitor Function Memory Cassette(hereafter referred to as the memory cassette) and the procedure for executing ladder monitoring

Installing a memory cassette in an A77GOT-S3 graphic operating terminal (hereafter abbreviated to "A77GOT-S3") enables monitoring of the sequence program

The memory cassette can also be used to expand the internal memory if the volume of monitor data exceeds 256 Kbytes

The memory cassettes are classified as follows depending on the type of display

Model Name	Memory Capacity	Toral Memory Capacity after Installing A77GOT-S3
A7GT-MCA0K-LD	0 Kbyte	256 Kbytes
A7GT-MCA256K-LD	256 Kbytes	512 Kbytes
A7GT-MCA512K-LD	512 Kbytes	768 Kbytes
A7GT-MCA768K-LD	768 Kbytes	1024 Kbytes

The following additional functions are available when using memory cassettes whose software version is C or later

• Entry code check for PC read operations, and entry code input

• Consecutive reading of all relevant ladder blocks

Checking the software version

Rating plate
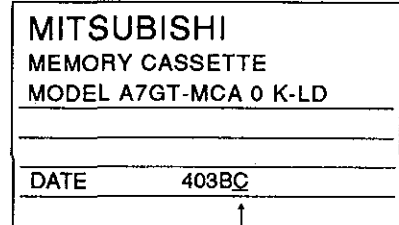
```
MITSUBISHI
MEMORY CASSETTE
MODEL A7GT-MCA 0 K-LD


DATE        403BC
                ↑
          Software version
```

2. INSTALLING A MEMORY CASSETTE

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Turn off the power to the A77GOT-S3 before installing or removing the memory cassette

(1) Remove the cassette cover attached to the back side of the A77GOT-S3 by pulling it out pressing in the part (A)

Top side of A77GOT S3

Cassette cover

(A)
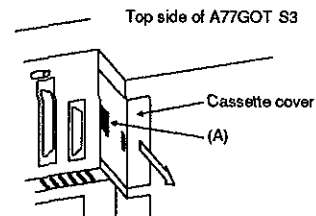
(2) Install a memory cassette to the back side of the A77GOT-S3

Top side of A77GOT-S3

Memory cassette

3 QUICK GUIDE TO PROCEDURE PRIOR TO EXECUTING LADDER MONITORING
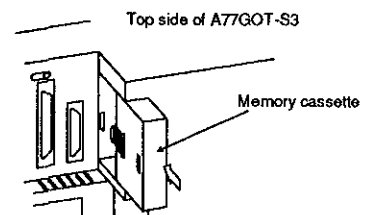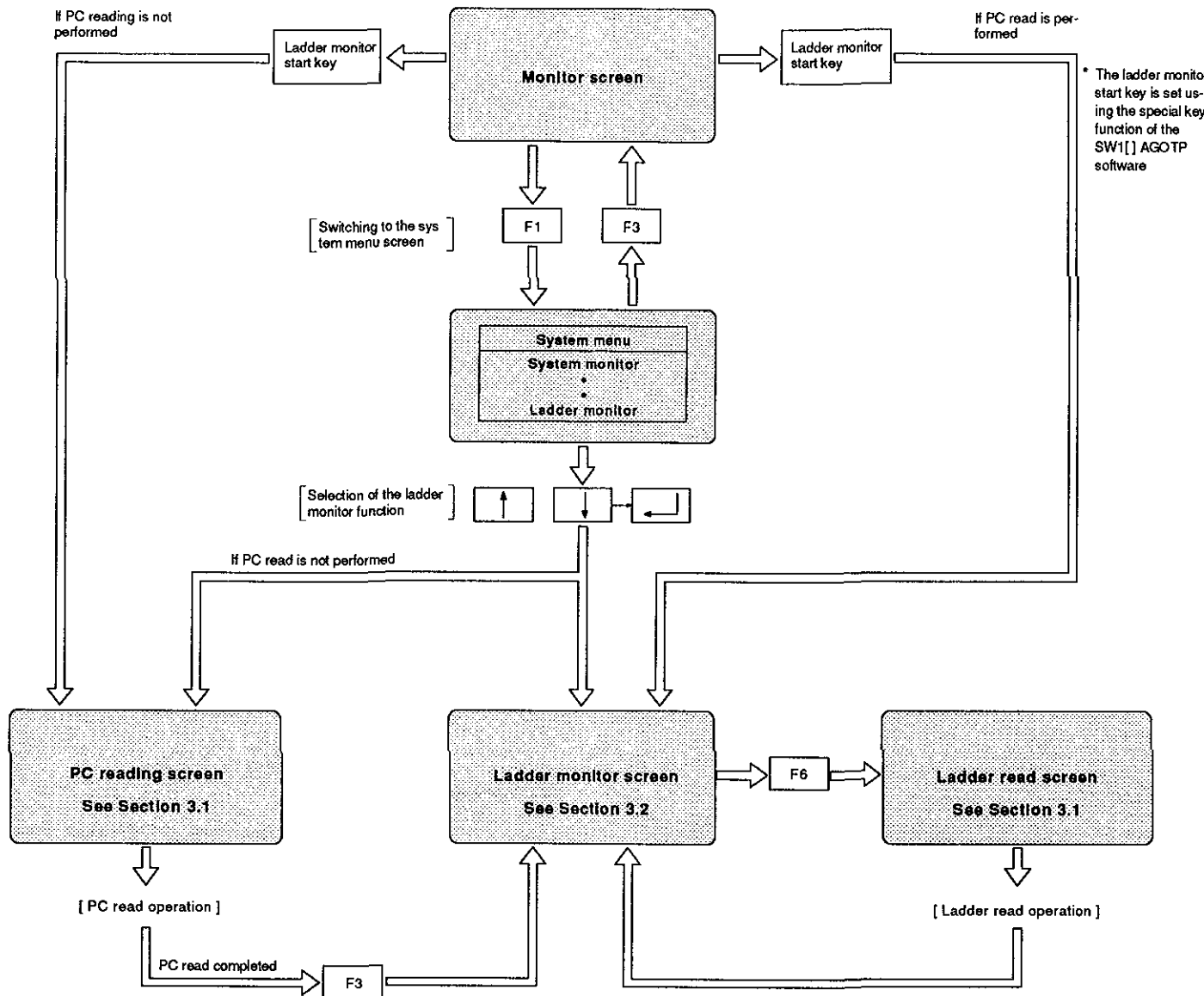

* The ladder monitor start key is set using the special key function of the SW1[ ] AGOTP software

3 1 Operations on the PC Read Screen

This is the operation used to read the sequence program to be monitored from the PC CPU

[PC read screen]


```
READ ST  FF
        0  Master/Control ST
       FF: Host ST
     1 - 64: Other ST


PARAM PROGRAM COMMENT EX CMNT
     KEYWORD [        ]
```

READ PROGRAM

MAIN PROGRAM
SUB PROGRAM 1
SUB PROGRAM 2 (A4U)
SUB PROGRAM 3 (A4U)

[I] SEL [↵] WHEN SET

1	2	3	4	5	6	7	8
9	0						F
F1		F3		F5			SP
Monitor		Menu		Break			Clear
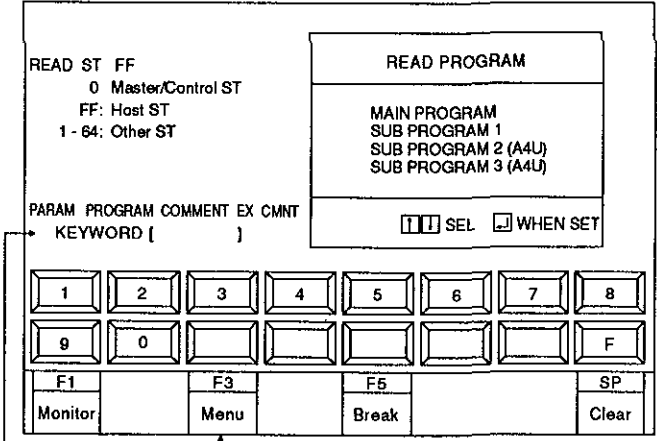
On completion of the PC read operation, the display switches to the ladder monitor

When a PC read operation is executed, the entry code is displayed if one is registered in the PC CPU

[Procedure]

[1] Specify station for reading [F][F], [0] to [6][4]

[2] Specify item to be read [↑][↓]

[3] Execute PC read [↵]

[4] Input the entry code [1] to [0], [A] to [F]

(if one is registered in the PC CPU)

[5] Entry code check [↵]

If the input entry code matches the registered one, or if no entry code is registered, the processing details and volume of reading are displayed after execution of the PC read operation

[6] Switch to the ladder monitor screen [F3]

[Key functions]

[F1] Used to switch to the monitor screen

[F3] Used to switch to the system menu screen/ladder monitor screen

[F5]: Used to stop PC read processing

[SP] Used to clear the input station to be read or the input entry code

[Ladder monitor screen]
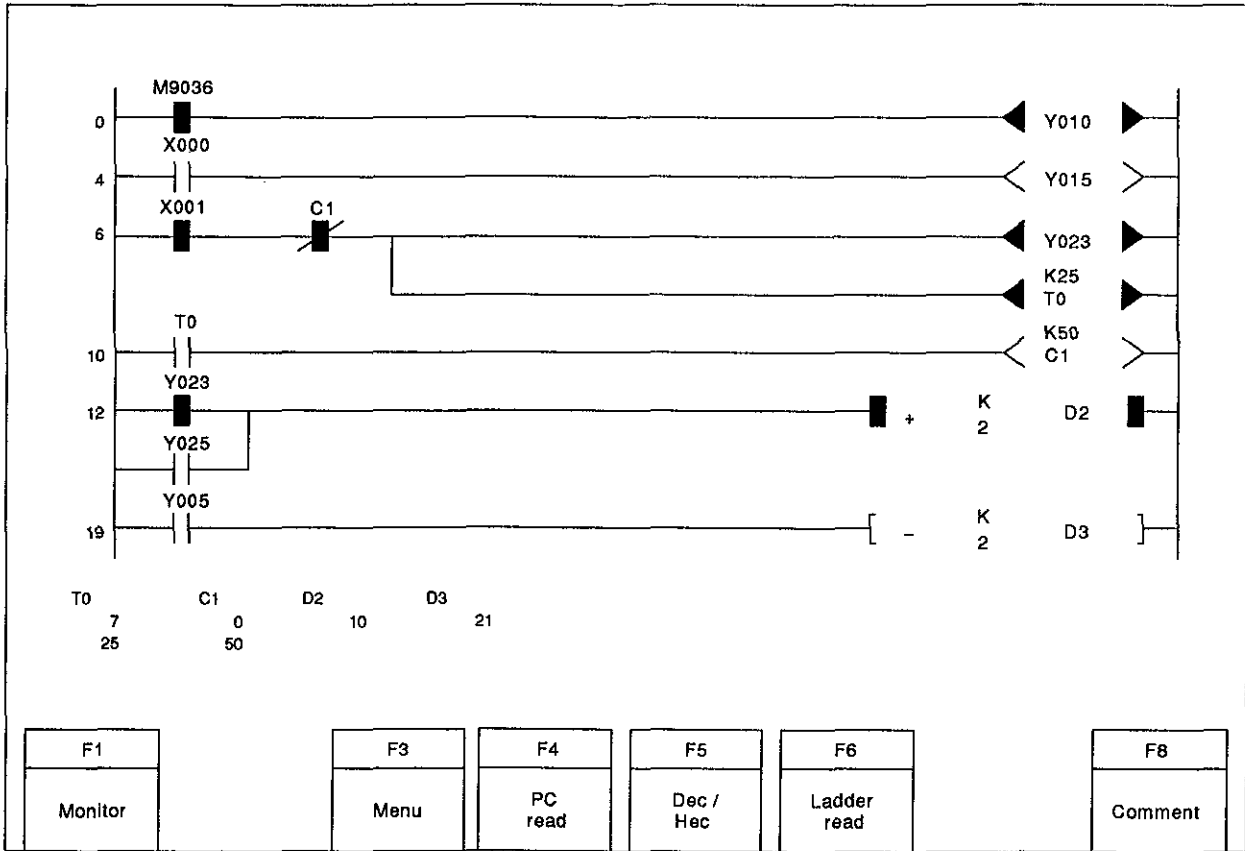
[Display contents]
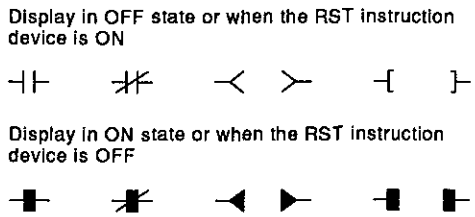
- A maximum of eight ladder rungs can be displayed on one screen when using the ladder monitor function When using the ladder with comment monitor function, the maximum is four rungs

- The maximum number of contacts that can be displayed on one rung is eleven If twelve or more contacts are set, those from the twelfth on will be displayed on a new rung underneath the existing ones on the screen

- ON/OFF states in the ladder are displayed as follows

  Display in OFF state or when the RST instruction device is ON

  Display in ON state or when the RST instruction device is OFF

- The MCR instruction is always displayed like this:

- The present value or set value for up to seven word devices, timers, and counters is displayed at the bottom of the screen

- When the set value of a timer or counter is set in a data register, the contents of that data register are displayed as the set value

- When the ladder with comment monitor screen is displayed and both a comment 1/comment 2 and an extension comment are appended to a monitored device, only the extension comment will be displayed

[Key functions]

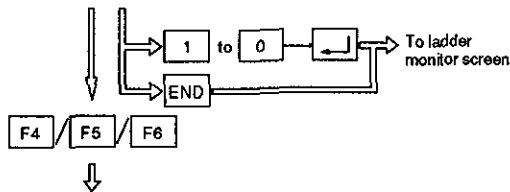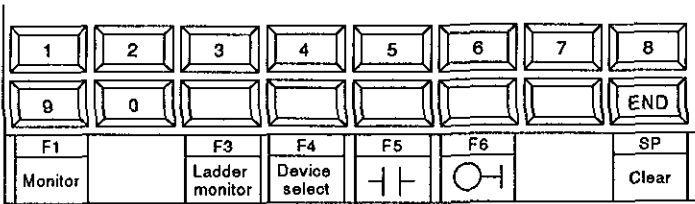| [F1]	Used to switch to the monitor screen
[F3]	Used to switch to the system menu screen
[F4]	Used to switch to the PC read screen
[F5]:	Used to switch between decimal and hexadecimal display formats
[F6]	Used to switch to the ladder read screen
[F8]:	Used to switch between the ladder with comment monitor screen and the ladder monitor screen
[→][←]	Used to switch between displays at the bottom of the screen if there are eight or more word devices, timers, and counters on one screen
[↑][↓]	Used to scroll the screen up and down in ladder block units

POINT

If the PC CPU comment capacity is changed after executing a PC read operation, comments may not be displayed on the ladder monitor screen If the comment capacity is changed, execute PC read again
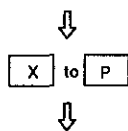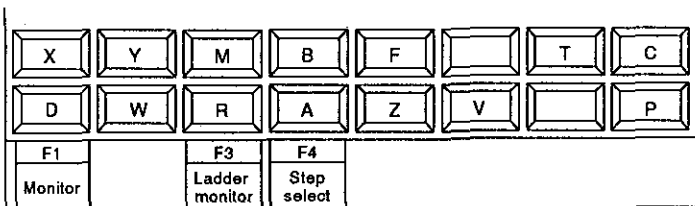
Specify the ladder program to be monitored
Any of the following operations can be used to specify the program
(1) Specifying a step number
(2) Specifying the final ladder block of the program
(3) Specifying a device number
(4) Specifying a circuit symbol and device number
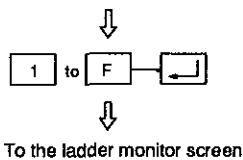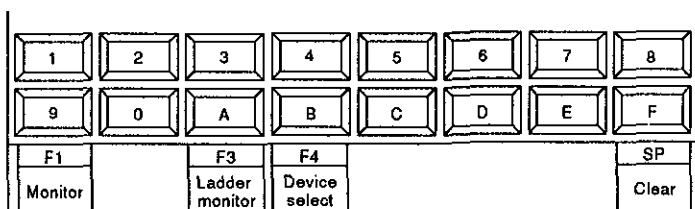
[Ladder read screen]

[Step selection]

1	2	3	4	5	6	7	8
9	0						END

F1		F3	F4	F5	F6		SP
Monitor		Ladder monitor	Device select	⊣⊢	◯⊣		Clear

1 to 0 — ⏎ → To ladder monitor screen

END

F4 / F5 / F6

⇩

[Device selection screen]

X	Y	M	B	F		T	C
D	W	R	A	Z	V		P

F1		F3	F4
Monitor		Ladder monitor	Step select

⇩

X to P

⇩

[Device number specification screen]

1	2	3	4	5	6	7	8
9	0	A	B	C	D	E	F

F1		F3	F4		SP
Monitor		Ladder monitor	Device select		Clear

⇩

1 to F — ⏎

⇩

To the ladder monitor screen

[Procedure]

(1) Monitoring a ladder program by specifying a step number
    [1] Specify the step number   [1] to [0]
    [2] Execute monitoring   [⏎]

(2) Monitoring a ladder program by specifying the final ladder block:
    [1] Specify the END instruction   : [END]

(3) Monitoring a ladder program by specifying a device number:
    [1] Display the device selection screen   [F4]
    [2] Specify the device name   : [X] to[P]
    [3] Specify the device number   : [1] to [0]
    [4] Execute monitoring   : [⏎]
        The program is displayed with the specified device number highlighted

(4) Monitoring a ladder program by specifying a circuit symbol and device number
    [1] Specify the circuit symbol   : [F5]/[F6]
    [2] Specify the device name   : [X] to [P]
    [3] Specify the device number   [1]to [0]
    [4] Execute monitoring   : [⏎]
        The program is displayed with the specified device number highlighted

* In the case of methods (3) and (4), after the program has been displayed, it is possible to successively read other ladder blocks that conform to the specification after the currently monitored step number by pressing the [⏎] key
In successive reading, once the END step has been reached, reading will start again from the first step
Successive reading can be cancelled by scrolling up or down one ladder block by using the [↑], [↓] keys

[Key functions]

[F1] Used to switch to the monitor screen

[F3] Used to switch to the ladder monitor screen

[F4] Used to switch between the device selection screen and step selection screen

[SP]: Used to clear the input step number or input device number

REVISIONS

A	
Feb., 1995	

IMPORTANT
(1) Design the configuration of a system to provide an external protective or safety interlocking circuit for the CPs
(2) The components on the printed circuit boards will be damaged by static electricity, so avoid handling them directly If it is necessary to handle them take the following precautions
(a) Ground human body and work bench
(b) Do not touch the conductive areas of the printed circuit board and its electrical parts with and non-grounded tools etc