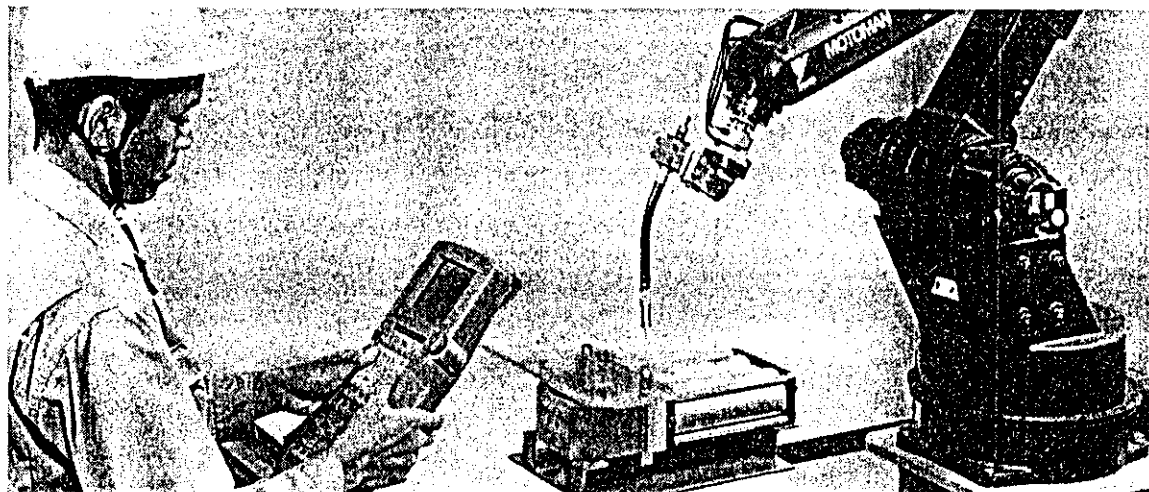


YASNAC MRC

CONTROLLER FOR INDUSTRIAL ROBOT MOTOMAN

CUSTOMER MAINTENANCE MODE OPERATION



Before initial operation, read these instructions thoroughly, and retain for future reference.

BEFORE VER 3.000



YASKAWA

HW9480940

YASNAC MRC is provided with functions required for maintenance as the customer maintenance mode.

In the customer maintenance mode, the following functions are available :

- Automatic setting of system parameters required when I/O modules (I/O boards, welder I/F boards, etc.) are added
- Changing user options
- Initialization of various user files

By initializing a user file, the stored data will be deleted.

In the customer maintenance mode, the security system using user ID numbers is employed. Only authorized personnel who knows the user ID number can enter the customer maintenance mode. Select a supervisor in charge of maintenance for proper management and control. The same user ID number is used as the customer function number.

To use the customer maintenance mode functions, pay attention to the following points after understanding the main purpose thoroughly.

1. Operation must be performed under control of the person in charge of maintenance.
2. Store and control the necessary data before initialization.
3. YASKAWA will not be responsible for any accidents or failures caused by improper data setting.

1. ACTIVATION OF CUSTOMER MAINTENANCE MODE

By turning ON the control power supply with the **CUSTOMER** key on the programming pendant depressed, the following display appears.

YASNAC-MRC

MAINTENANCE MODE

LANGUAGE **JAPANESE** ENGLISH ← Select JAPANESE / ENGLISH DISPLAY

SEL BY <←> / CONFIRM BY <ENTER>

Depress the **ENTER** key after selecting either "JAPANESE" or "ENGLISH", the display is changed to the following one.

Notes :

1. Selecting "JAPANESE" or "ENGLISH" gives a display in the selected language.
2. The setting of this display is valid only in the maintenance mode, having nothing to do with 1st/2nd language in the online mode.

USER ID

THIS FUNCTION IS FOR MAINTENANCE
AUTHORIZED PERSONNEL ONLY

> *****

Enter ID No. (8-digit) ← Enter User ID No.

By depressing the **ENTER** key after entering the user ID number using the number keys, the following maintenance mode display appears.

MAINTENANCE MODE

* : FOR MAKER'S EXCLUSIVE USE

SETUP SYSTEM

*

*

SEL BY ↑ ↓ / EXEC BY <ENTER>

Note : Since items marked with * are used exclusively for the manufacturer, the display is masked.

2. HOW TO ADD I/O MODULES

When an I/O module (I/O boards, welder I/F boards, etc.) is added, mount the I/O module on the I/O rack with the control power supply OFF.

Then start up the customer maintenance mode in the procedures described in Par. 1 "ACTIVATION OF CUSTOMER MAINTENANCE MODE".

Select the "SETUP SYSTEM" and depress the **ENTER** key in the maintenance mode display. The following display appears.

| |
|--|
| SETUP SYSTEM * : FOR MAKER'S EXCLUSIVE USE SYSTEM CONFIGURATION INITIALIZE FILES * * SEL BY ↑ ↓ / EXEC BY <ENTER> |
|--|

Note : Since items marked with * are used exclusively for the manufacturer, the display is masked.

Select the "SYSTEM CONFIGURATION" and depress the **ENTER** key in the setup system display. The following display appears.

| |
|---|
| SYSTEM CONFIGURATION * : FOR MAKER'S EXCLUSIVE USE * * * I/O MODULES * * CUSTOMER OPTION SEL BY ↑ ↓ / EXEC BY <ENTER> RETURN BY <CANCEL> |
|---|

Note : Since items marked with * are used exclusively for the manufacturer, the display is masked.

2. HOW TO ADD I/O MODULES (Cont'd)

Select the I/O module in the system configuration display.

The following display appears.

(Display where MIO04 is mounted on slot 1, MIO01 on slot 2 and MEW01-1 on slot 5)

| IO MODULES | |
|------------|--------|
| SLOT-1 | DIO24 |
| SLOT-2 | DIO32 |
| SLOT-3 | NONE |
| SLOT-4 | NONE |
| SLOT-5 | EW01-1 |

CONFIRM BY <ENTER> / ABORT BY <CANCEL>

I/O Board Display

| Board | Display |
|-------|---------|
| MIO01 | DIO32 |
| MIO02 | DIO32 |
| MIO03 | DIO16 |
| MIO04 | DIO24 |

Check that each slot display is the same as the I/O module mounted status.

Note : If the slot display is different, check the mounted status. If the mounted status is correct, the I/O module may be defective. Contact your YASKAWA representative.

By depressing the **ENTER** key, the following message is displayed for verification.

| IO MODULES | |
|------------|--------|
| SLOT-1 | DIO24 |
| SLOT-2 | DIO32 |
| SLOT-3 | NONE |
| SLOT-4 | NONE |
| SLOT-5 | EW01-1 |

ARE YOU SURE? **YES** NO

SEL BY <←> / CONFIRM BY <ENTER>

When the **ENTER** key is depressed after selecting "YES" in the above message, the system parameter is set automatically according to the current hardware mounted status and then the system configuration display is returned. Then addition of I/O module has been completed.

3. HOW TO CHANGE CUSTOMER OPTIONS

To change a customer option (remote function, etc.), start up the customer maintenance mode in the procedures described in Par. 1 "ACTIVATION OF CUSTOMER MAINTENANCE MODE".

Select the "SETUP SYSTEM" and depress the **ENTER** key in the maintenance mode display. The following display appears.

| |
|--|
| SETUP SYSTEM * : FOR MAKER'S EXCLUSIVE USE SYSTEM CONFIGURATION INITIALIZE FILES * * |
| SEL BY ↑ ↓ / EXEC BY <ENTER> |

Note : Since items marked with * are used exclusively for the manufacturer, the display is masked.

Select the "SYSTEM CONFIGURATION" and depress the **ENTER** key in the system setup display. The following display appears.

| |
|--|
| SYSTEM CONFIGURATION * : FOR MAKER'S EXCLUSIVE USE * * * IO MODULES * * CUSTOMER OPTION |
| SEL BY ↑ ↓ / EXEC BY <ENTER> RETURN BY <CANCEL> |

Note : Since items marked with * are used exclusively for the manufacturer, the display is masked.

3. HOW TO CHANGE CUSTOMER OPTIONS (Cont'd)

Select the customer option in the system configuration display. The following display appears.

| | | |
|--|--|--|
| CUSTOMER OPTION | | |
| REMOTE FUNCTION | | |
| IO | <input checked="" type="checkbox"/> USED | <input type="checkbox"/> NOT USED |
| COMMAND | <input checked="" type="checkbox"/> USED | <input checked="" type="checkbox"/> NOT USED |
| PP / PBOX | <input checked="" type="checkbox"/> USED | <input checked="" type="checkbox"/> NOT USED |
| ARC WELDING | <input checked="" type="checkbox"/> STANDARD | <input type="checkbox"/> ENHANCED |
| SEL ITEM BY ↑ ↓ / SEL OPTION BY ← → EXEC BY <ENTER> / ABORT BY <CANCEL> | | |

Displayed only for arc-welding application.

By depressing the ☒ ENTER key, the following message is displayed for verification only when the setting is changed. Unless the setting is changed, the system configuration display is returned.

| | | |
|---------------------------------|--|--|
| CUSTOMER OPTION | | |
| REMOTE FUNCTION | | |
| IO | <input checked="" type="checkbox"/> USED | <input type="checkbox"/> NOT USED |
| COMMAND | <input checked="" type="checkbox"/> USED | <input checked="" type="checkbox"/> NOT USED |
| PP / PBOX | <input checked="" type="checkbox"/> USED | <input checked="" type="checkbox"/> NOT USED |
| ARC WELDING | <input type="checkbox"/> STANDARD | <input checked="" type="checkbox"/> ENHANCED |
| INITIALIZE RELATED FILES | | |
| ARE YOU SURE? | <input checked="" type="checkbox"/> YES | <input type="checkbox"/> NO |
| SEL BY ← → / CONFIRM BY <ENTER> | | |

When the ☒ ENTER key is depressed after selecting "YES" in the above message, the system parameter is set automatically according to the current hardware mounted status and then the system configuration display is returned. Then customer option changing operation has been completed.

Note : Only when the arc-welding function setting is changed, the welding start condition file and end condition file are initialized.

When the COM-ARC function is valid the arc-welding function cannot be enhanced.

4. HOW TO INITIALIZE FILES

To initialize a user file, select the "SETUP SYSTEM" and depress the **ENTER** key in the maintenance mode display. The following display appears.

| |
|--|
| SETUP SYSTEM * : FOR MAKER'S EXCLUSIVE USE SYSTEM CONFIGURATION INITIALIZE FILES * * |
| SEL BY ↑ ↓ / EXEC BY <ENTER> |

Note : Since items marked with * are used exclusively for the manufacturer, the display is masked.

Then select "INITIALIZE FILES" and depress the **ENTER** key in the system setup display. The following display appears.

| |
|---|
| INITIALIZE FILES * : FOR MAKER'S EXCLUSIVE USE ALL FILES PARAMETER FILES CONDITION FILES NAME FILES * JOB DATA CIO LADDER * |
| SEL BY ↑ ↓ / EXEC BY <ENTER> RETURN BY <CANCEL> |

Select the file using the **↑** or **↓** key and depress the **ENTER** key.

By selecting "ALL FILES", "JOB DATA" or "CIO LADDER", the message is displayed for verification.

By depressing the **ENTER** key after selecting "YES", initialization is executed.

Note : Since items marked with * are used exclusively for the manufacturer, the display is masked.

Even if "ALL FILES" is selected, items marked with * will not be initialized.

4. HOW TO INITIALIZE FILES (Cont'd)

When "PARAMETER FILES" is selected in the file initialization display, the following display appears.

| PARAMETER FILES | | |
|-------------------------------|----|-----|
| * : FOR MAKER'S EXCLUSIVE USE | | |
| ALL FILES | * | CM |
| * | * | SE |
| * | * | VC |
| * | AP | RSM |
| * | RS | * |
| SC | SP | |

SEL BY ↑ ↓ / EXEC BY <ENTER>
RETURN BY <CANCEL>

When the parameter is selected using the , , or key and when the key is depressed, the message is displayed for verification. By depressing the key after selecting "YES", initialization is executed.

Note : Since items marked with * are used exclusively for the manufacturer, the display is masked.

Even if "ALL FILES" is selected, items marked with * will not be initialized.

By selecting "CONDITION FILES" in the file initialization display, the following display appears.

| CONDITION FILES |
|-----------------------------|
| ALL FILES |
| TOOL FILE |
| USER COORDINATE FILE |
| WEAVING FILE |
| WELDING FILES |
| COM-ARC FILE |
| PATH CORRECT CONDITION FILE |

SEL BY ↑ ↓ / EXEC BY <ENTER>
RETURN BY <CANCEL>

Select the file using the or key and depress the key. When "ALL FILES", "TOOL FILE", "USER COORDINATE FILE", "WEAVING FILE" or "PATH CORRECT CONDITION FILE" is selected, the message is displayed for verification. By depressing the key after selecting "YES", initialization is executed.

4. HOW TO INITIALIZE FILES (Cont'd)

By selecting "WELDING FILE" in the condition file display, the following display appears.

| |
|--|
| WELDING FILES |
| ALL FILES |
| WELD MACHINE CHARACTERISTICS FILE |
| WELD MACHINE CHARACTERISTICS INIT FILE |
| ARC START CONDITION FILE |
| ARC END CONDITION FILE |
| ARC CONDITION AUXILIARY FILE |
| SEL BY ↑ ↓ / EXEC BY <ENTER> RETURN BY <CANCEL> |

Select the file using the or key and depress the key. The message is displayed for verification. By depressing the key after selecting "YES", initialization is executed.

When "COM-ARC FILE" is selected in the condition file display, the following display appears.

| |
|--|
| COM-ARC FILE |
| ALL FILES |
| COM-ARC CONDITION FILE |
| COM-ARC DATA FILE |
| PHASE OFFSET DATA FILE-1 |
| PHASE OFFSET DATA FILE-2 |
| SEL BY ↑ ↓ / EXEC BY <ENTER> RETURN BY <CANCEL> |

Select the file by using the or key and depress the key. The message is displayed for verification. By depressing the key after selecting "YES", initialization is executed.

By selecting "NAME FILE" in the file initialization display, the following display appears.

4. HOW TO INITIALIZE FILES (Cont'd)

| |
|--|
| NAME FILES |
| ALL FILES |
| RESERVED JOB NAME FILE |
| UNIVERSAL IN / OUT SIGNAL NAME FILE |
| USER VARIABLE NAME FILE |
| SEL BY ↑ ↓ / EXEC BY <ENTER> RETURN BY <CANCEL> |

Select the file by using the or key and depress the key. The message is displayed for verification. By depressing the key after selecting "YES", initialization is executed.

YASNAC MRC

CONTROLLER FOR INDUSTRIAL ROBOT MOTOMAN

CUSTOMER MAINTENANCE MODE OPERATION

TOKYO OFFICE Ohlemachi Bldg, 1-6-1 Ohlemachi, Chiyoda-ku, Tokyo, 100 Japan
 Phone (03) 3284-9111 Telex YASKAWA J33530 Fax (03) 3284-9034
 SEOUL OFFICE 8th Floor Seoul Center Bldg, 91-1, Sogong-Dong, Chung-ku, Seoul, Korea 100-070
 Phone (02) 776-7844 Fax (02) 753-2639
 TAIPEI OFFICE Shen Hsiang Tang Sung Chiang Building 10F 146 Sung Chiang Road, Taipei, Taiwan
 Phone (02) 563-0010 Fax (02) 567-4677
 MOTOMAN INC.
 805 Liberty Lane West Carrollton, OH, 45449, U.S.A
 Phone (513) 847-6200 Fax (513) 847-6277
 24 Hour Service Hotline (513) 847-3200
 YASKAWA ELECTRIC EUROPE GmbH
 Am Kronberger Hang 2, 65824 Schwalbach, Germany
 Phone (49) 6196-569-300 Fax (49) 6196-888-301
 Motoman Robotics AB
 Box 130 S-38500, Torsås, Sweden
 Phone 0486-10575 Fax 0486-11410
 Motoman Robotec GmbH
 Kammerfeldstraße 1, 8051 Allershausen, Germany
 Phone 08166-900 Fax 08166-9039
 YASKAWA ELECTRIC (SINGAPORE) PTE. LTD.
 Head Office : CPF Bldg, 79 Robinson Road # 13-05, Singapore 0106, SINGAPORE
 Phone 221-7530 Telex (87) 24890 YASKAWA RS Fax 224-5854
 Service Center : 221 Henderson Road, # 07-20 Henderson Building Singapore 0315, SINGAPORE
 Phone 276-7407 Fax 276-7406
 YATEC ENGINEERING CORPORATION
 Shen Hsiang Tang Sung Chiang Building 10F 146 Sung Chiang Road, Taipei, Taiwan
 Phone (02) 563-0010 Fax (02) 567-4677



YASKAWA ELECTRIC CORPORATION

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