

**Kawasaki Robot Controller  
E Series**

**Arm ID Board  
Manual**

**(Option)**

Robot

**Kawasaki Heavy Industries, Ltd.**

## PREFACE

This manual limits the description of the Arm ID Board (Option) of the E Series Controller.

Read the fundamental manuals of the E Series Controller (safety manual, installation and connection manual, external I/O manual, operation manual and AS language reference manual), separate-volumes, without fail together with this manual. Do not perform any procedure described herein until the contents of this manual are fully understood.

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1. This manual does not describe troubleshooting for the systems in which the robot is utilized. Accordingly, Kawasaki is not responsible for any accidents, damages, and/or problems relating to industrial property rights as a result of using the system.
  2. It is recommended that all personnel assigned for activation of operation, teaching, maintenance or inspection of the robot attend the necessary education/training course(s) prepared by Kawasaki, before assuming their responsibilities.
  3. Kawasaki reserves the rights to change, revise, or update this manual without prior notice.
  4. This manual may not, in whole or in part, be reprinted or copied without the prior written consent of Kawasaki.
  5. Store this manual with care and keep it available for use at any time. If the robot is reinstalled or moved to a different site or sold off to a different user, attach this manual to the robot without fail. In the event the manual is lost or damaged severely, contact Kawasaki.
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## SYMBOLS

The items that require special attention in this manual are designated with the following symbols.

Ensure proper and safe operation of the robot and prevent physical injury or property damage by complying with the safety matters given in the boxes with these symbols.



### DANGER

**Failure to comply with indicated matters can result in imminent injury or death.**



### WARNING

**Failure to comply with indicated matters may possibly lead to injury or death.**



### CAUTION

**Failure to comply with indicated matters may lead to physical injury and/or mechanical damage.**

### [ NOTE ]

Denotes precautions regarding robot specification, handling, teaching, operation and maintenance.



### WARNING

- 1. The accuracy and effectiveness of the diagrams, procedures, and detail explanations given in this manual cannot be confirmed with absolute certainty. Accordingly, it is necessary to give one's fullest attention when using this manual to perform any work. Should any unexplained questions or problems arise, please contact Kawasaki.**
- 2. Safety related contents described in this manual apply to each individual work and not to all robot work. In order to perform every work in safety, read and fully understand the safety manual, all pertinent laws, regulations and related materials as well as all the safety explanation described in each chapter, and prepare safety measures suitable for actual work.**

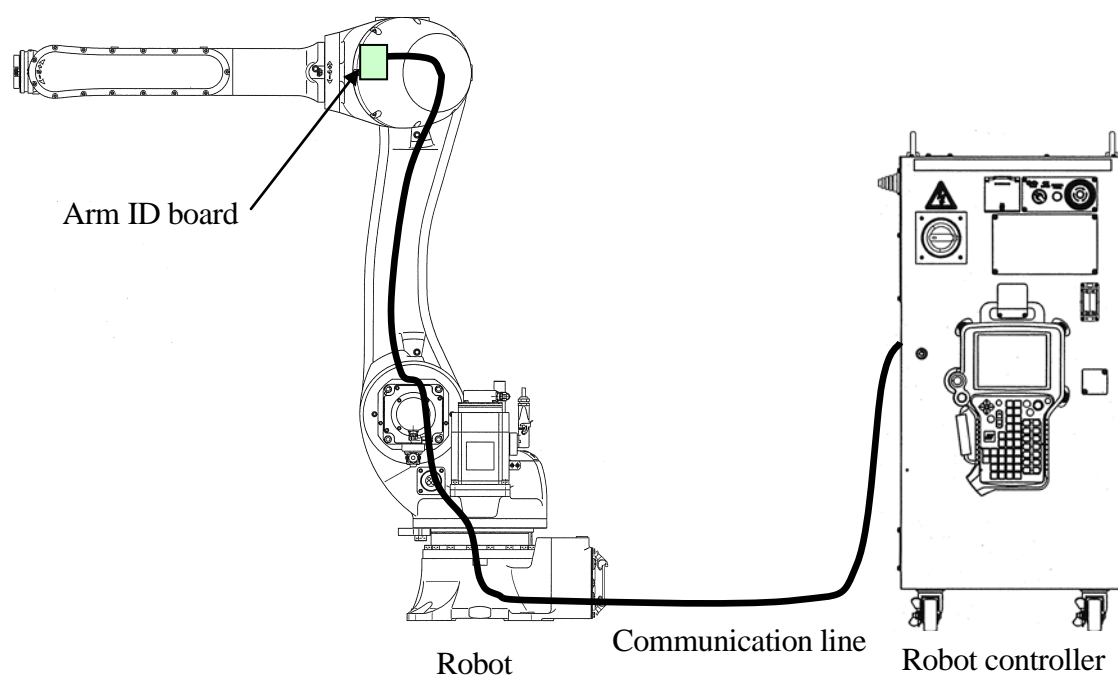
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## 1.0 OUTLINE

The arm ID board is mounted on the robot arm to store the robot model and maintenance information. The board is equipped with data storage memory and I/O signal contacts. The arm ID board is connected with the robot controller by communication line, which enables execution of registration/display/deletion of maintenance logs from the controller.

Also, I/O signals through robot arm can be used by adding an arm I/O board, a daughter board of the arm ID board.



## 2.0 HARDWARE SPECIFICATION

### 2.1 FUNCTION

The arm ID board is composed of the following boards.

1. 1PV/1TK boards: CPU board

Reads/writes data from/on the built-in flash memory via serial communication with the controller.

2. 1JD/1JE/1TY/1XY boards: I/O expansion board (daughter board of 1PV/1TK boards)

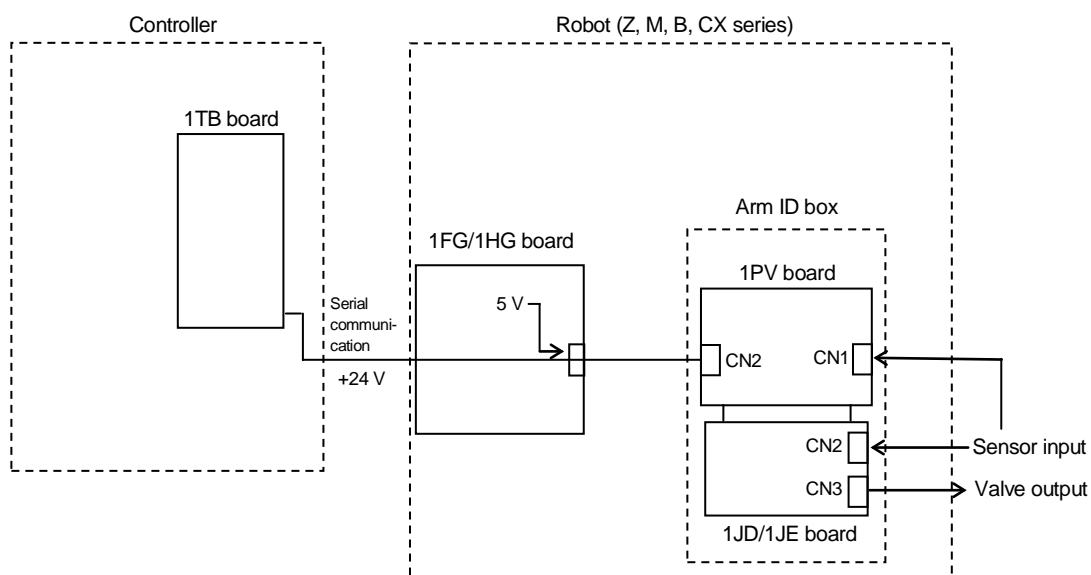
Performs the I/O functions as shown in the table below via serial/parallel communication with the controller:

Robot model	Arm ID board	Arm I/O board		No. of inputs/outputs
Z series M series B series CX series	1PV	NPN	1JD (SINK)	Inputs 24 Outputs 8
		PNP	1JE (SOURCE)	Inputs 24 Outputs 8
R series	1TK	NPN	1TY (SINK)	Inputs 12 Outputs 8
		PNP	1TY (SOURCE)	Inputs 12 Outputs 8
CP series BA series	1TK	NPN	1XY*	Inputs 12
		PNP		Outputs 8

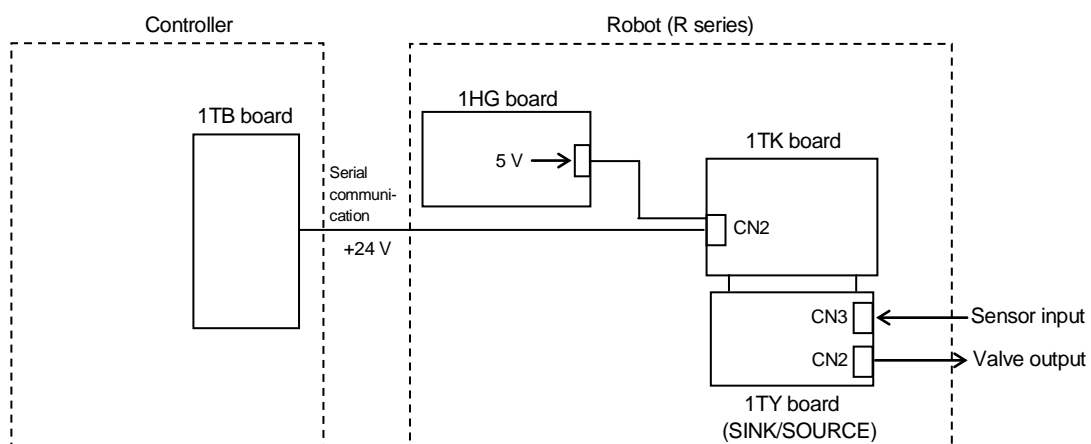
**NOTE\*** Use spec. change connector to switch NPN/PNP on 1XY board. (See 2.4)

## 2.2 CONNECTION

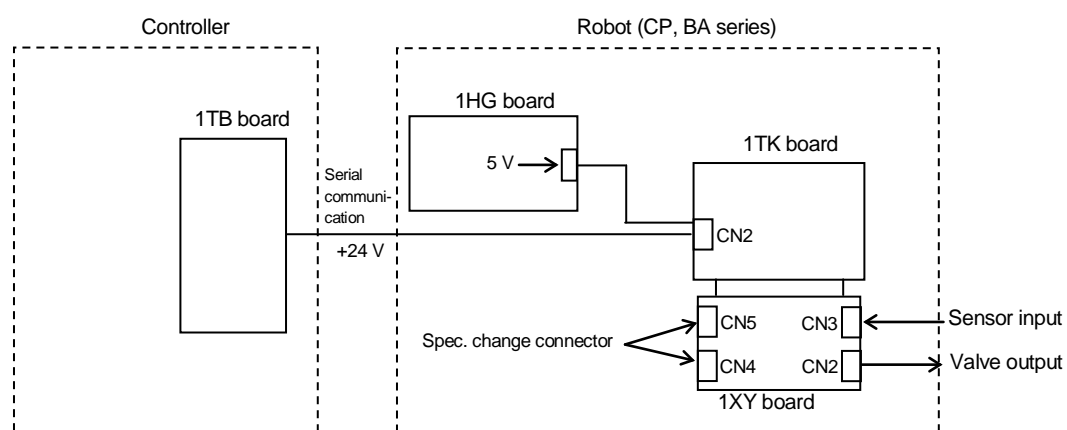
### Z, M, B, CX series



### R series

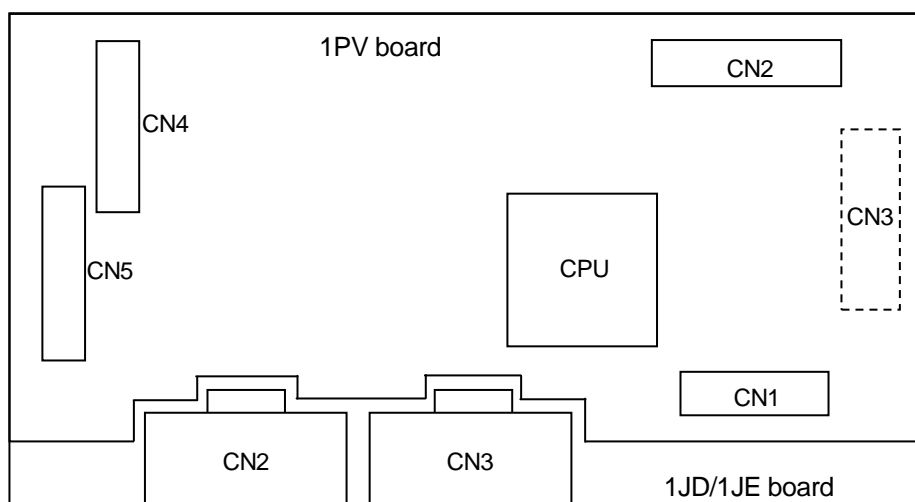


### CP, BA series

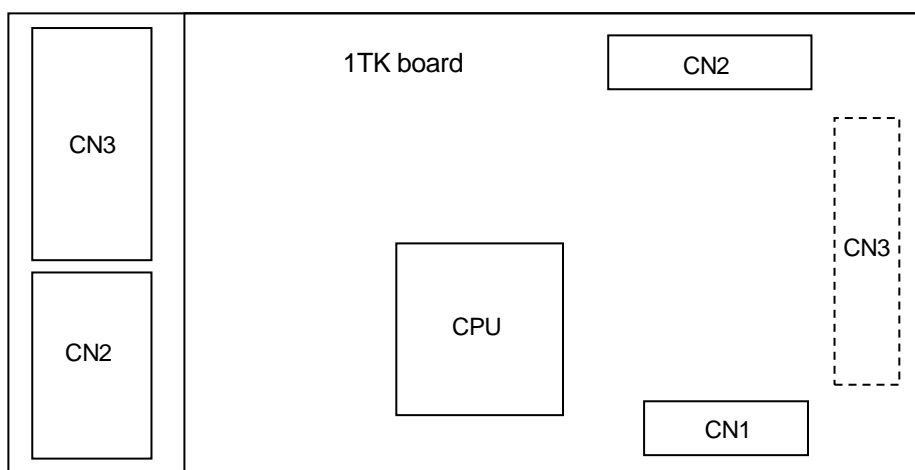


## 2.3 CONNECTION OF I/O

Daughter boards 1JD/1JE/1TY/1XY are necessary to perform I/O function of the arm ID board. (See the figure below.) For optional harnesses for the connection with I/O devices, refer to the separate manual.



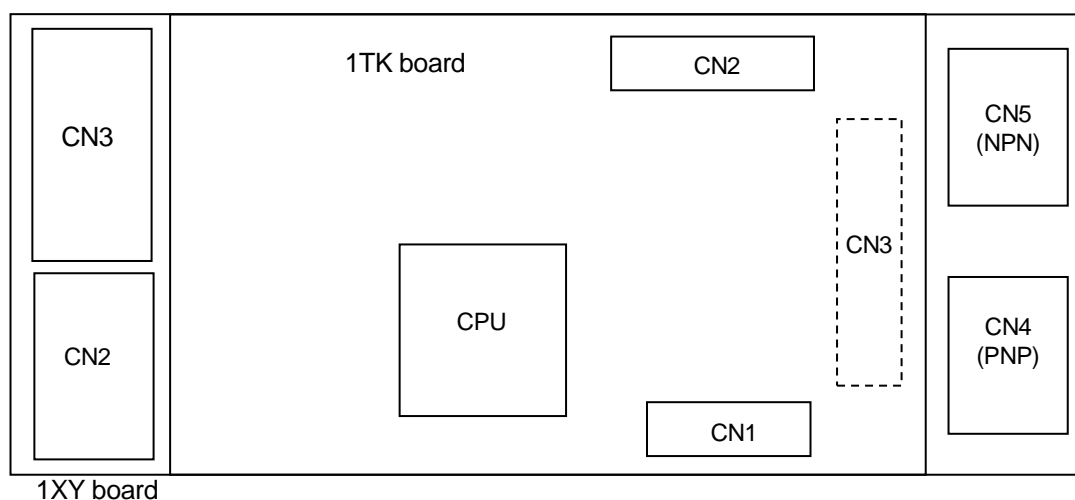
Outline view of 1PV board with 1JD/1JE board connected



1TY board

Outline view of 1TK board with 1TY board connected

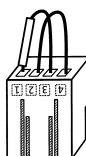




Outline view of 1TK board with 1XY board connected

## 2.4 SWITCHING NPN/PNP SPECIFICATIONS ON 1XY BOARD

For 1XY board, use a spec. change connector (see below) to switch between NPN and PNP specifications. Connecting the spec. change connector to CN5 switches specification to NPN and connecting to CN4 switches to PNP.



NPN/PNP spec. change connector (KHI PN: 50975-5804)

For the robot shipped with 1XY board installed, the spec. change connector is connected as blow.

For Europe, North America: Connected to CN4 (PNP specification)

For Japan, Asia: Connected to CN5 (NPN specification)



### CAUTION

**Be careful not to connect the spec. change connector incorrectly. If connected incorrectly, it may damage 1XY board or connected load. Make sure to match NPN/PNP specification on 1XY board and connected load specification before operating the robot.**

## 2.5 I/O SPECIFICATIONS FOR EACH BOARD

### 1PV board connector

CN1 B07B-XASK-1-GW (JST), Harness side: XAP-07V-1 (Contact: SXA-001GW-P0.6)

Pin	Function	Remarks
1	Unused	
2	Unused	
3	IO24G	24G
4	IO24 V	+24 V
5	DIN1	IN2
6	DIN0	IN1
7	COM	C

### 1JD/1JE board connector

CN2 Manufacturer : Tyco Electronics Amp

Board side : 1318127-1

Harness side : 1-1318118-9

(Contact : 1318108-1(AWG28 - 24), 1318107-1(AWG22 - 18))

Pin	Function	Remarks
A1	IP3	IN3
B1	IP4	IN4
A2	IP5	IN5
B2	IP6	IN6
A3	IP7	IN7
B3	IP8	IN8
A4	IP9	IN9
B4	IP10	IN10
A5	IP11	IN11
B5	IP12	IN12
A6	IP13	IN13
B6	IP14	IN14
A7	IP15	IN15
B7	IP16	IN16
A8	IO24 V	+24 V
B8	IO24G	24G
A9	IO24 V	+24 V
B9	IO24G	24G
A10	IO24 V	+24 V
B10	IO24G	24G

CN3 Manufacturer : Tyco Electronics Amp

Board side : 1318127-2

Harness side : 2-1318118-9

(Contact : 1318108-1(AWG28 - 24), 1318107-1(AWG22 - 18))

Pin	Function	Remarks
A1	IO24 V	+24 V
B1	IO24G	24G
A2	IO24 V	+24 V
B2	IO24G	24G
A3	IP17	IN17
B3	IP18	IN18
A4	IP19	IN19
B4	IP20	IN20
A5	IP21	IN21
B5	IP22	IN22
A6	IP23	IN23
B6	IP24	IN24
A7	OP1	SOL1
B7	OP2	SOL2
A8	OP3	SOL3
B8	OP4	SOL4
A9	OP5	SOL5
B9	OP6	SOL6
A10	OP7	SOL7
B10	OP8	SOL8

### 1TK board connector

CN1 B07B-XASK-1-GW (JST), Harness side: XAP-07V-1 (Contact: SXA-001GW-P0.6)

Pin	Function	Remarks
1	Unused	
2	Unused	
3	IO24G	24G
4	IO24 V	+24 V
5	Unused	
6	Unused	
7	Unused	

### 1TY/1XY board connector

CN2 Manufacturer : JST

Board side : B16B-J21DK-GGXR

Harness side : J21DF-16V-KX-L

(Contact : SJ2F-002GF-P1.0(AWG28 - 24)、SJ2F-01GF-P1.0(AWG24 - 20))

Pin	Function	Remarks
A1	COM	SOLC
B1	SOL1	SOL1
A2	COM	SOLC
B2	SOL2	SOL2
A3	COM	SOLC
B3	SOL3	SOL3
A4	COM	SOLC
B4	SOL4	SOL4
A5	COM	SOLC
B5	SOL5	SOL5
A6	COM	SOLC
B6	SOL6	SOL6
A7	COM	SOLC
B7	SOL7	SOL7
A8	COM	SOLC
B8	SOL8	SOL8

CN3 Manufacturer : JST

Board side : B20B-J21DK-GGXR

Harness side : J21DF-20V-KX-L

(Contact : SJ2F-002GF-P1.0(AWG28 - 24), SJ2F-01GF-P1.0(AWG24 - 20))

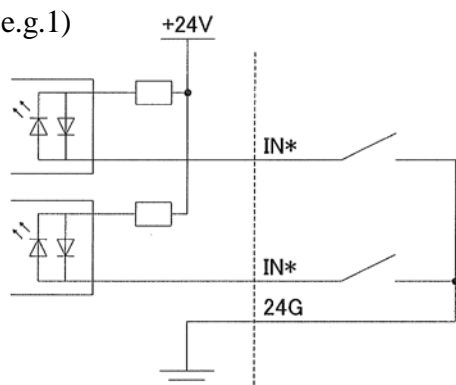
Pin	Function	Remarks
A1	IO24 V	+24 V
B1	IO24G	24G
A2	DIN1	SIG1
B2	DIN2	SIG2
A3	DIN3	SIG3
B3	DIN4	SIG4
A4	IO24 V	+24 V
B4	IO24G	24G
A5	DIN5	SIG5
B5	DIN6	SIG6
A6	DIN7	SIG7
B6	DIN8	SIG8
A7	IO24 V	+24 V
B7	IO24G	24G
A8	DIN9	SIG9
B8	DIN10	SIG10
A9	DIN11	SIG11
B9	DIN12	SIG12
A10	IO24 V	+24 V
B10	IO24G	24G

## Examples of external connection:

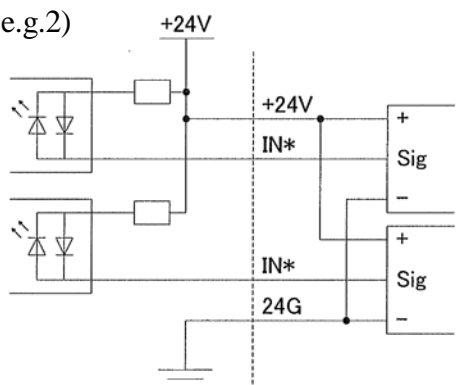
### NPN, SINK spec.

#### 1. Sensor input

e.g.1)

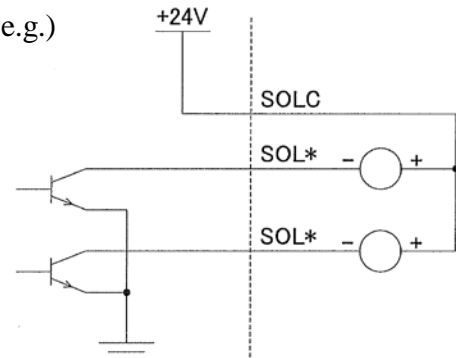


e.g.2)



#### 2. Solenoid valve output

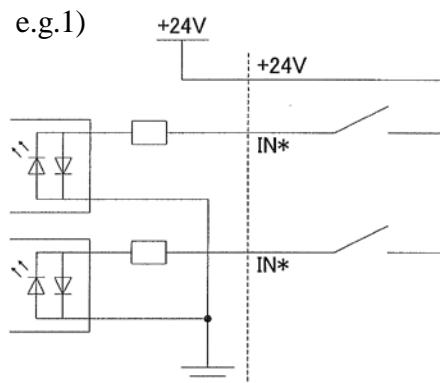
e.g.)



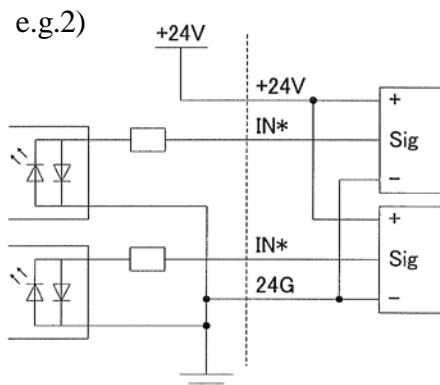
### PNP, SOURCE spec.

#### 1. Sensor input

e.g.1)

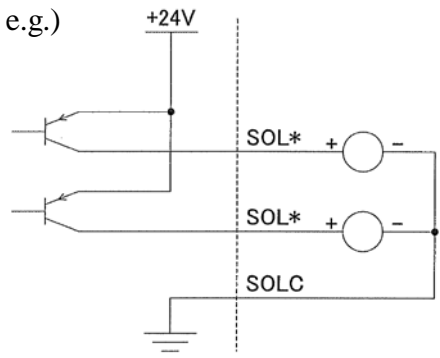


e.g.2)



#### 2. Solenoid valve output

e.g.)



Input specification	Output specification
Input method: Photocoupler input	Output method: Transistor output (Semiconductor relay output for 1XY board.)
Input voltage: DC24 V $\pm 10\%$	Working voltage: DC24 V $\pm 10\%$
Input current: 10 mA $\pm 20\%$ / 1 input	Maximum continuous load current: 100 mA or less/ 1 output
Connection method: Connector connection	Connection method: Connector connection
Total current: 700 mA or less (400 mA or less for E7x controller)	

### 3.0 FUNCTION

#### 3.1 HOLDING OF ROBOT TYPE AND ZEROING DATA

Messages shown in the figures below appear at the time of controller power ON in the following cases:

1. When replacing the main CPU board/whole robot controller or initializing the system.
2. When replacing the robot arm.

<pre> ***** * KAWASAKI ROBOT SYSTEM[AS] START * * KAWASAKI HEAVY INDUSTRIES, LTD. * ***** UAS01000101 2002/09/13 16:14  Please wait 5 seconds.  Initialize ? 0: NO 1: Initialization of the system 2: Setting to the shipment state 999: Initialization of all data &gt;  AC primary power off.  Robot 1 type is not corresponding [ Arm side ] Robot name: FS010N-A001 Num of axes 6 Serial No. 1 [ Controller side ] Robot name: FS010N-B001 Num of axes 6 Serial No. 1  Select number 1. Start by the arm side data. 2. Start by the controller side data. Number ? </pre>	<pre> ***** * KAWASAKI ROBOT SYSTEM[AS] START * * KAWASAKI HEAVY INDUSTRIES, LTD. * ***** UAS01000101 2002/09/13 16:14  Please wait 5 seconds.  Initialize ? 0: NO 1: Initialization of the system 2: Setting to the shipment state 999: Initialization of all data &gt;  AC primary power off.  Zeroing data of robot 1 is not corresponding Select number 1 [ Arm side ] ZEROING 268435456 268435456 268435456 268435456 268435456 268435456 OFFSET 32767 32767 32767 32767 32767 32767 2 [ Controller side ] ZEROING 268435456 268435456 268435456 268435456 268435456 268435456 OFFSET 32768 32768 32768 32768 32768 32768 Number ? </pre>
---	--

In these cases, select “Start by the arm side”/“Arm side” and system starts referring the arm and zeroing data hold in the arm ID board. By doing this, existing motion program can be executed to perform the same work as before without re-zeroing, etc.

#### 3.2 MAINTENANCE LOG

Executes registration, display and deletion of the maintenance log via Aux. 0704.



### 3.2.1 REGISTRATION OF MAINTENANCE LOG

For registering a new maintenance log, position the cursor on 1 in the initial screen of the maintenance log and press . (To view a registered maintenance log, select 2 and press , or to delete a log, select 3 and press .)

When the registration screen for the maintenance log is displayed, input robot no. and press <Next Page>.

The keyboard screen appears by pointing the cursor to the input box. Input the name of the person in charge and press <ENTER> to exit the keyboard screen.

Press <Next Page> to display the next screen for inputting maintenance note. If no note is input here, press . In this case, “Non of abnormality” is registered.

Aux.:Log Function:Maintenance Log:Maintenance Log Registration

Person in Charge      nakamura

Input Notes

Non of abnormality

Undo   Prev Page              

Input range : 78 characters

When there is any maintenance note to be registered here, point the cursor to the input box to display the keyboard screen, and input the note. Press <ENTER> to exit the keyboard screen.

Aux.:Log Function:Maintenance Log:Maintenance Log Registration

Person in Charge      nakamura

Input Notes

jt3 encoder change

Undo   Prev Page              

Input range : 78 characters

Pressing  displays the pop-up window confirming the content of the registration. Point cursor to <Yes> and press  to register. Select <No> and press  to not register.

Aux.:Log Function:Maintenance Log:Maintenance Log Registration

Person in Charge      nakamura

Input Notes

jt3 encoder change

Confirm

It registers from the following contents.

Person   nakamura


Memo    jt3 encoder change


Yes      No

Undo   Prev Page              

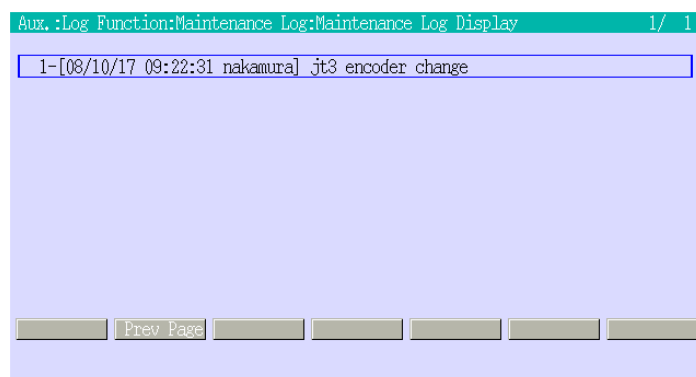
Input range : 78 characters


### 3.2.2 DISPLAY OF MAINTENANCE LOG

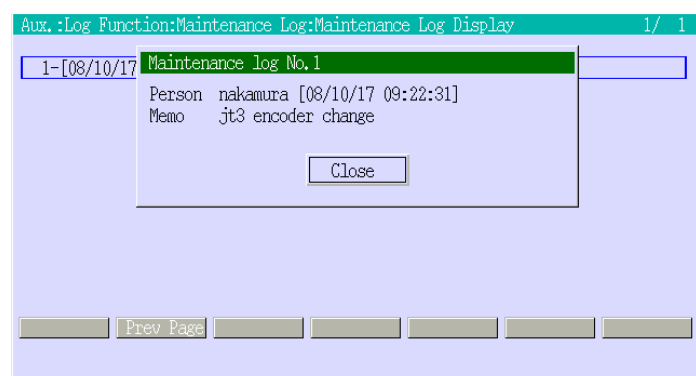
To view the registered maintenance log, position the cursor to 2 and press  in the initial screen. When the maintenance log display screen appears, input robot number and press <Next Page>.



The registration list is displayed. Position the cursor on desired item of the list.



Pressing  displays a pop-up window showing the content of the item.



### 3.2.3 DELETION OF MAINTENANCE LOG

To delete a registered maintenance log, select 3 and press  in the initial screen. When the maintenance log deletion screen appears, input robot number and press <Next Page>.

The registration list is displayed. Position the cursor on desired item to be deleted in the list.

Pressing  displays the pop-up window confirming deletion of the registration. Point cursor to <Yes> and press  to delete. Select <No> and press  to cancel the deletion.

## 4.0 SIGNAL SETTINGS

I/O signal settings can be made in the arm ID board. To use the parallel I/O ports on the arm ID board, allocate signals. Position the cursor on the desired box and input the value using <Number> keys.

TOP SIGNAL	SIGNAL NUMBER
OUTPUT SIGNAL 1	
INPUT SIGNAL 1001	

Undo [ ] [ ] [ ] [ ] [ ] [ ]

Input range : [1 - 64]

Refer to the table in 2.1 (p.5) for number of I/O signals.

### Setting Conditions

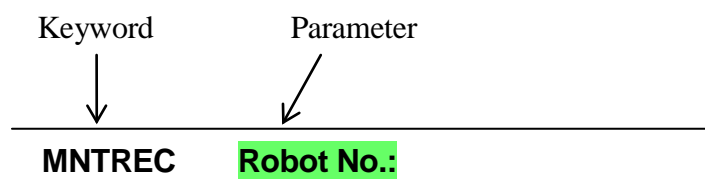
1. Output signals can be assigned by numbers 1 to 64, input signals by 1001 to 1064.
2. When two or more robots are used, the same signal number cannot be assigned.

## 5.0 AS LANGUAGE REFERENCE FOR ARM ID BOARD

Registration of log and signal settings for the arm ID board can be made in AS language as well as in Aux. function. The commands are as follows:

1. MNTREC command
2. MNTLOG command
3. ARMIOSET command

### EXAMPLE



Parameters marked with      can be omitted.  
Always enter a space between the keyword and the parameter.

---

## Monitor Command

---

**MNTREC**

**Robot No.:**

---

### Function

Registers the maintenance log on the arm ID board.

### Parameter

Robot No.

Specifies the number of robots. If omitted, the number 1 is assigned.

### Details

The maintenance log stores 100 entries. When the entry exceeds 100, the oldest entry is deleted.

### Example

```
>MNTREC
```

```
Person in charge of record (Input)? *****
```

```
Non of abnormality : 0 Memo input : 1? 1
```

```
Memo input: (Max. 78)
```

```
jt3 encode change
```

```
Content of registration
```

```
Person in charge : *****
```

```
Memo : jt3 encode change
```

```
Are you sure? (Yes:1, No:0) 1
```

```
Arm ID board is busy.
```

```
Writing ended.
```

```
>
```



### CAUTION

**Registration of the log may not be made normally if the controller power is turned OFF during the registration of the maintenance log. Do not turn OFF the controller power until “Writing ended.” is displayed.**

---

Monitor Command

---

**MNTLOG**     **Robot No.:**

---

Function

Displays the maintenance log up to the most current entry.

Parameter

Robot No.

Specifies the number of robots. If omitted, the number 1 is assigned.

Details

Displays the last 100 entries on maintenance log in the following format.

1-[*/*/*/* 12:00:00 kawasaki]	[Date Time Register name ]
[jt3 encode change]	[Registration data ]
2-[*/*/*/* 12:00:00 kawasaki]	
[Non of abnormality]	

Example

```
>MNTLOG
1-[*/*/*/* 12:00:00 kawasaki]
[jt3 encode change]
2-[*/*/*/* 12:00:00 kawasaki]
[Non of abnormality]
```



---

Monitor Command

---

<b>ARMIOSET</b>	<b>Robot No.:</b>	<b>Output signal No., Number of output signals, Input signal No., Number of input signals</b>
-----------------	-------------------	---

---

### Function

Sets the I/O signals for arm I/O board.

### Parameter

1. Robot No.

Specifies the number of robot. If omitted, the number 1 is assigned.

2. Output signal No.

Specifies the first number of output signals. Integer value up to 64. (By ZSIGSPEC)

3. Number of output signals

Specifies the number of output signals. Integer value of 1 - 8.

4. Input signal No.

Specifies the first number of input signals. Integer value up to 1064. (By ZSIGSPEC)

5. Number of input signals

Specifies the number of input signals. Integer value of 1 to 24.

### Details

8ch. (max.) out of 1-64 for output signals and 24ch. (max.) out of 1001-1064 for input signals can be set. (For the number of inputs/outputs, refer to the table of 2.1 (page 5).) The same signal number can not be used when two or more robots are operated. If the number other than robot number is specified for the parameter, do not omit any parameter. If omitted, an error occurs. When all the parameters shown above are specified, no query for inputting parameters is executed.

### Example

>ARMIOSET

TOP SIGNAL, SIGNAL NUMBER

OUTPUT SIGNAL      1                      0

Change? (If not, Press RETURN only.)

6, 8

TOP SIGNAL, SIGNAL NUMBER

OUTPUT SIGNAL      6                      8

Change? (If not, Press RETURN only.)

TOP SIGNAL, SIGNAL NUMBER

INPUT SIGNAL        1001                      0

Change? (If not, Press RETURN only.)

1012,24

TOP SIGNAL, SIGNAL NUMBER

INPUT SIGNAL        1012                      24

Change? (If not, Press RETURN only.)

>

## 6.0 OPERATION WHEN ABNORMALITY OCCURS

If abnormality occurs in the arm ID board, the following messages may appear when the controller power is turned ON.

### 6.1 CONTROLLER START-UP SCREEN1

<pre> ***** * KAWASAKI ROBOT SYSTEM[AS] START * * KAWASAKI HEAVY INDUSTRIES, LTD. * ***** UAS01000101 2002/09/13 16:14  Please wait 5 seconds.  Initialize ? 0: NO 1: Initialization of the system 2: Setting to the shipment state 999: Initialization of all data &gt;  AC primary power off.  Robot 1 type is not corresponding [ Arm side ] Robot name: FS010N-A001 Num of axes 6 Serial No. 1 [ Controller side ] Robot name: FS010N-B001 Num of axes 6 Serial No. 1  Select number 1. Start by the arm side data. 2. Start by the controller side data. Number ? </pre>	<pre> ***** * KAWASAKI ROBOT SYSTEM[AS] START * * KAWASAKI HEAVY INDUSTRIES, LTD. * ***** UAS01000101 2002/09/13 16:14  Please wait 5 seconds.  Initialize ? 0: NO 1: Initialization of the system 2: Setting to the shipment state 999: Initialization of all data &gt;  AC primary power off.  Zeroing data of robot 1 is not corresponding Select number 1 [ Arm side ] ZEROING 268435456 268435456 268435456 268435456 268435456 268435456 OFFSET 32767 32767 32767 32767 32767 32767 2 [ Controller side ] ZEROING 268435456 268435456 268435456 268435456 268435456 268435456 OFFSET 32768 32768 32768 32768 32768 32768 Number ? </pre>
---	--

Abnormality may occur in any of the following situations:

1. When replacing the main CPU board (or the controller itself), or initializing the system.
2. When replacing the robot arm.
3. When replacing arm ID board (in which different arm model data is registered).

In the case of 1. and 2., input 1  for selecting “Arm side”. In this case, the system starts using the model data stored in the arm ID board (including zeroing data). Also, the setting data on the controller side is overwritten by the data from the arm side. This message is not displayed from the next start-up. (Refer to 3.1 Holding of Robot Type and Zeroing Data.)

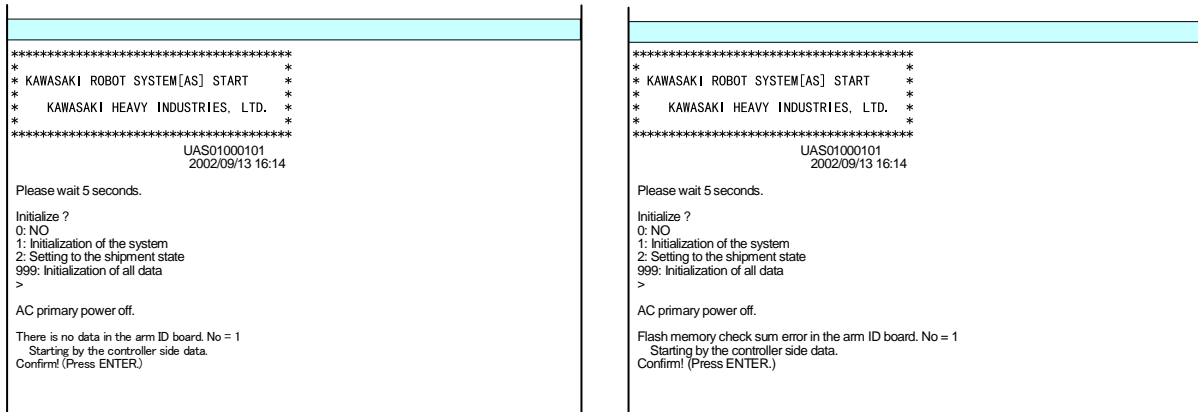
In the case of 3., input 2  for selecting “Controller side”. In this case, the system starts using the model data set in the controller (including zeroing data). Also, the data on arm ID board side is overwritten by the data on controller side. This message is not displayed from the next start-up.



#### WARNING

**When starting based on the data set on the controller or arm ID board, be sure to confirm before moving the robot that the displayed pose value coincides with that of the actual arm. If not, check the correctness of arm model selection and zeroing data.**

## 6.2 CONTROLLER START-UP SCREEN2



Abnormality may occur in any of the following situations:

1. When no data exists in the arm ID board. (when mounting a new arm ID board, etc.)
2. When a sum check error occurs in the data of the arm ID board.

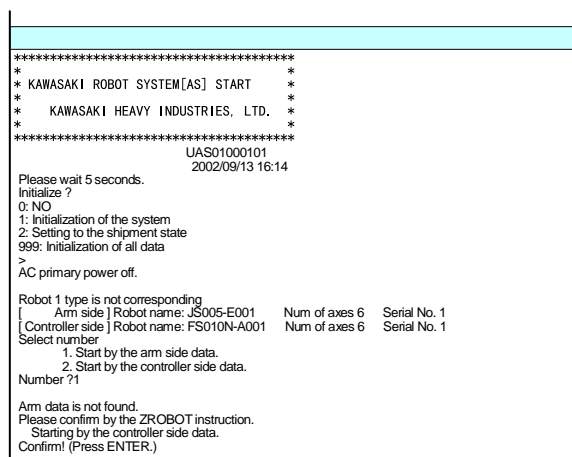
In either case, pressing <Enter> forcibly starts the system by setting data on the controller side.

**WARNING**

**When starting based on the data set on the controller, be sure to confirm before moving the robot that the displayed pose value coincides with that of the actual arm. If not, check the correctness of arm model selection and zeroing data.**

When the arm ID board-related error occurs after the controller start-up, the board may be in failure. (Refer to 6.5 Controller Start-up Screen 5.)

## 6.3 CONTROLLER START-UP SCREEN3



This screen is displayed if the robot model does not match between the controller and arm when starting up selecting “Arm side”. Check the robot model settings.

## 6.4 CONTROLLER START-UP SCREEN4

```

*****
* KAWASAKI ROBOT SYSTEM[AS] START *
* KAWASAKI HEAVY INDUSTRIES, LTD. *
*****
UAS01000101
2002/09/13 16:14

Please wait 5 seconds.
Initialize ?
0: NO
1: Initialization of the system
2: Setting to the shipment state
999: Initialization of all data
>
AC primary power off.

There is no robot classification code on the arm side.
Please confirm by the ZROBOT instruction.
Confirm! (Press ENTER.)

```

If this screen is displayed, check the arm model settings.



### WARNING

**When setting the arm model, be sure to confirm before moving the robot that the displayed pose value coincides with that of the actual arm. If not, check the correctness of arm model selection and zeroing data.**

## 6.5 CONTROLLER START-UP SCREEN5

```

*****
* KAWASAKI ROBOT SYSTEM[AS] START *
* KAWASAKI HEAVY INDUSTRIES, LTD. *
*****
UAS01000101
2002/09/13 16:14

Please wait 5 seconds.
Initialize ?
0: NO
1: Initialization of the system
2: Setting to the shipment state
999: Initialization of all data
>
AC primary power off.

(D2002) No response from the arm ID board.

```

```

*****
* KAWASAKI ROBOT SYSTEM[AS] START *
* KAWASAKI HEAVY INDUSTRIES, LTD. *
*****
UAS01000101
2002/09/13 16:14

Please wait 5 seconds.
Initialize ?
0: NO
1: Initialization of the system
2: Setting to the shipment state
999: Initialization of all data
>
AC primary power off.

(E1021) Arm ID board error. (code XX)

```

```

*****
* KAWASAKI ROBOT SYSTEM[AS] START *
* KAWASAKI HEAVY INDUSTRIES, LTD. *
*****
UAS01000101
2002/09/13 16:14

Please wait 5 seconds.
Initialize ?
0: NO
1: Initialization of the system
2: Setting to the shipment state
999: Initialization of all data
>
AC primary power off.

(E1157) Arm ID I/F board error. (code XX)

```

The board may be in failure. Refer to 7.0 Error Code for details.

## 7.0 ERROR CODE

(D2002) No response from the Arm ID Board.

This occurs when no response is received from the arm ID board. Contact failure or the cable disconnection or the Arm ID board or servo board may be in failure.

(E1021) Arm ID board error. (Code XX)

Refer to the code table below. The arm ID board or servo board may be in failure.

(E1157) Arm ID I/F board error. (Code XX)

Refer to the code table below. The servo board may be in failure.

Code	Contents	E1021	E1157
4AH	Defective data	○	
4FH	Failure in writing memory on arm ID board	○	
C1H	Sum check error in communication data	○	○
C5H	Communication protocol error	○	○
C6H	Timeout error of communication response		○
FFH	Other error	○	○

4AH :The memory contents on arm ID board is abnormal.

4FH :Writing on the memory of the arm ID board is disabled. Replace the arm ID board.

C\*H :Contact failure or disconnection of the cables.

F\*H :Turn the controller power OFF, then ON. If the error still occurs, the board may be in failure.



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Arm ID Board Manual (Option)

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