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WARNING

THE INSTALLATION SHALL BE MADE BY QUALIFIED INSTALLATION PERSONNEL AND SHOULD CONFORM TO ALL NATIONAL AND LOCAL CODES

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Hyundai Robot

Hi5aDN230426FMEN3

Hi5a Controller Function Manual

Embedded DeviceNet

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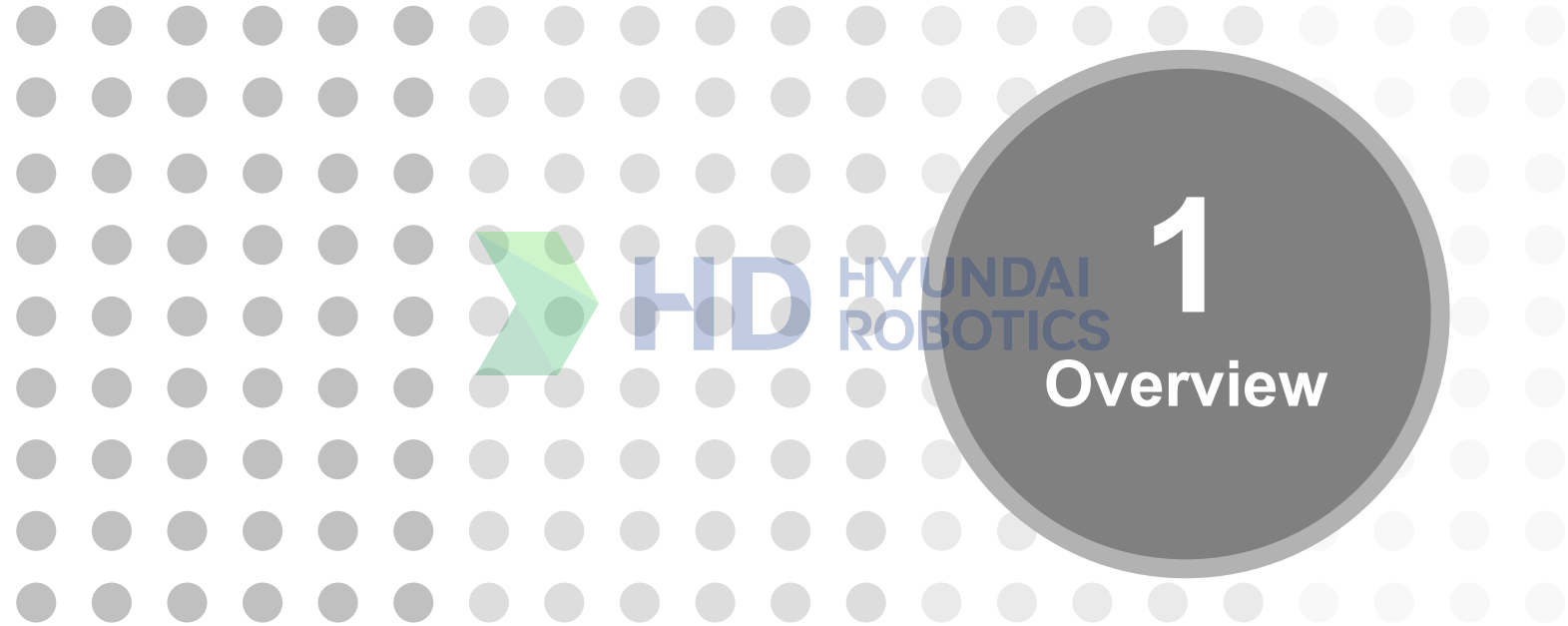

1 Overview

1.1. Prior knowledge

Understanding the manual well requires the following knowledge.

- Method for using the Hi5a robot controller.
- Method for using the embedded PLC of the Hi5a robot controller
- Method for installing and utilizing the DeviceNet network

1.2. About fieldbus

Fieldbus is an open industrial standard for operating diverse devices such as sensors, buttons, motor drivers and manipulating interface in factories, by connecting them to PLC (Programmable Logic Controller) through a single cable line.

Fieldbus makes it possible to provide intelligent services such as centralized monitoring of the overall status of a network or centralized reconfiguration of the network. For example, when it comes to switches, fieldbus is advantageous because more detailed information (operation mode setting, sensor failure), not just about on/off status, can be sent and received.

As a single cable line is used for a field bus, the time and costs for wiring can be reduced. As the configuration of wiring is simple, fieldbus is advantageous in terms of maintenance. In addition, differently from protocols with non-deterministic response such as Ethernet, fieldbus guarantees a certain level of data response speed, making it possible to meet the requirements of some industries where critical time characteristic is important.

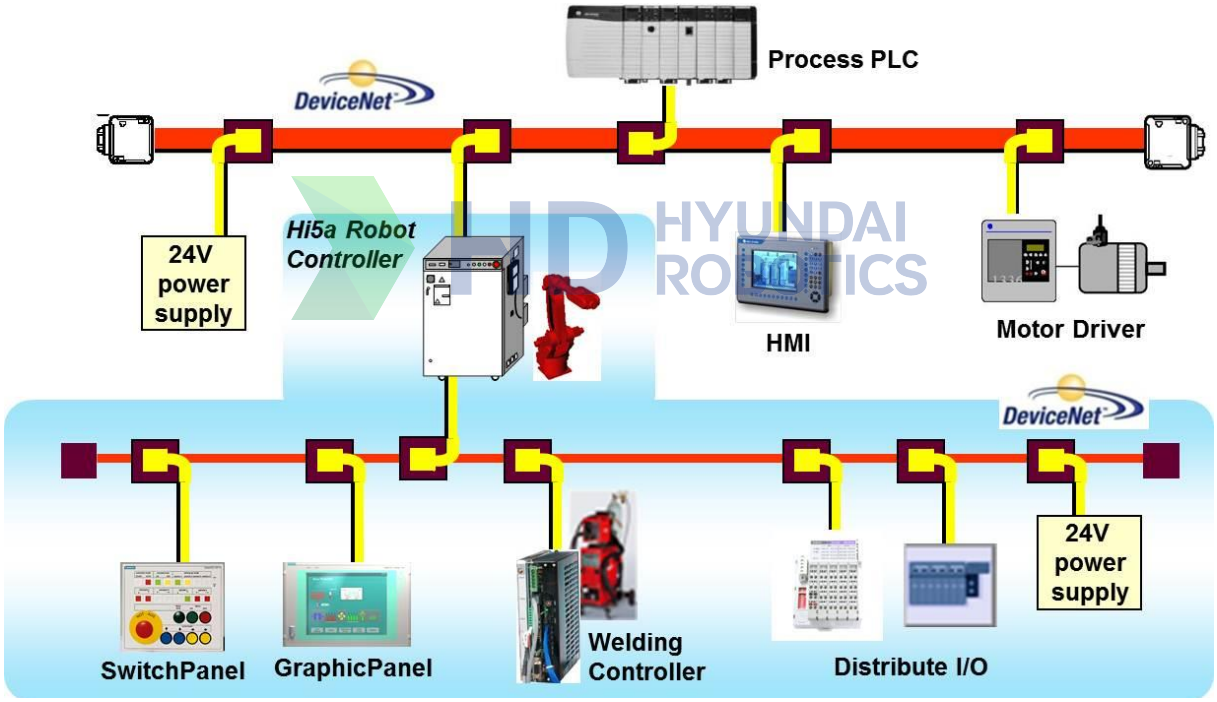

Figure 1.1 Fieldbus block diagram

One master and multiple slaves are connected trough one fieldbus network. The master searches and manages the overall network and exchange data with slaves. Generally speaking, a PLC is a master and other units, such as sensors, buttons, and controllers are slaves.

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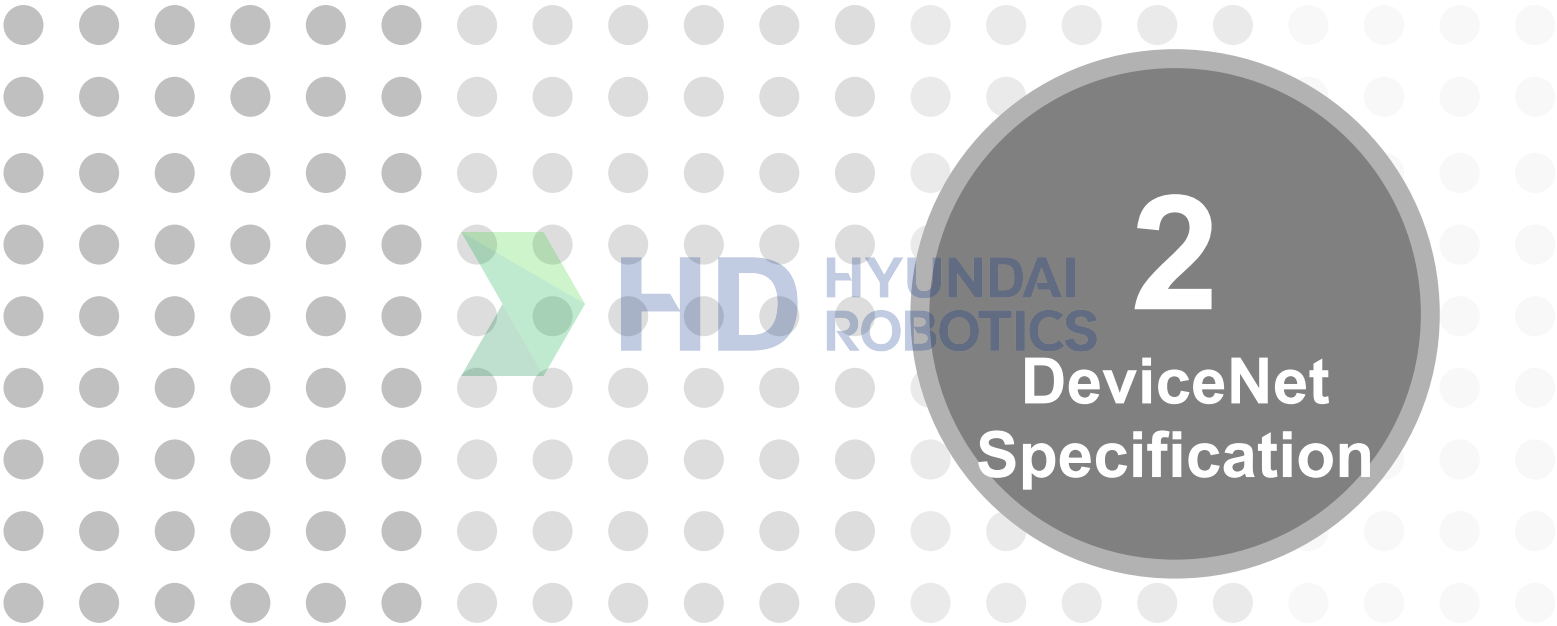
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2
DeviceNet
Specification

2.1. DeviceNet basic specification

The following shows basic specification of DeviceNet.

Table 2-1 DeviceNet basic specification

Transfer rate	The cable can have :			
	Trunk length	Max drop length	Maximum node account	Cumulative drop length
125k bit/s	500 m (1,640 ft)	6m (20 ft)	64	156 m (512 ft)
250k bit/s	250 m (820 ft)			78 m (256 ft)
500k bit/s	100 m (328 ft)			39 m (128 ft)
Terminating resistor	121Ω, 1% metal film, 1/4 Watt			
Potential difference between V+ and V-	24 Volt			

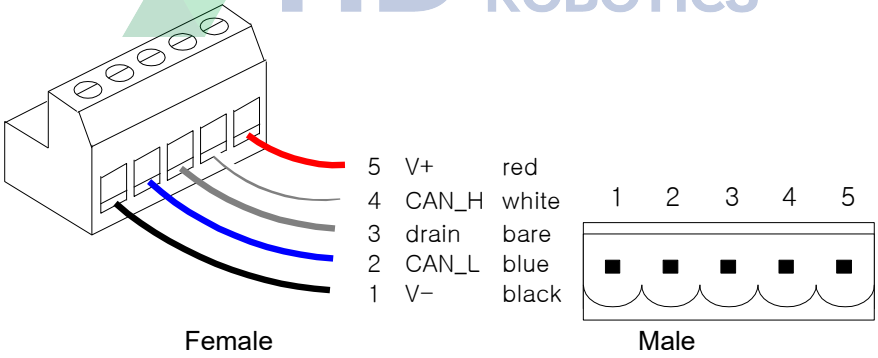

Figure 2.1 DeviceNet open type connector pin-out

2.2. Embedded DeviceNet master specification

The Hi5a Embedded DeviceNet master specification is shown in Table 2-2.

Table 2-2 Embedded DeviceNet master specification

IO Connection	POLL
Node address (MAC ID)	0 (Fixed)
Input	FN[1~63].X[1~128]
Output	FN[1~63].Y[1~128]

2.3. Embedded DeviceNet slave specification

The Hi5a Embedded DeviceNet slave specification is shown in Table 2-3.

Table 2-3 Embedded DeviceNet slave specification

IO Connection	POLL, COS(Change Of State)
Node address (MAC ID)	0~63
Input	User setting (1~120bytes)
Output	User setting (1~120bytes)
Embedded PLC fieldbus Input and output	FB5 object

2.4. Embedded DeviceNet Slave EDS File

Install the embedded DeviceNet EDS file in the setting software of the DeviceNet master device in which a robot controller will be connected to use the Hi5a Embedded DeviceNet slave.

Download the Hi5a Embedded DeviceNet slave EDS file from the following Web site. Click FieldbusConfig to download the file and use the EDS file in the [Hi5 Embedded DeviceNet Slave EDS File] folder after decompressing the file.

- Korean: http://www.hyundai-engine.com/korean/robot/robot06.asp
- English: http://www.hyundai-engine.com/robot/robot06.asp

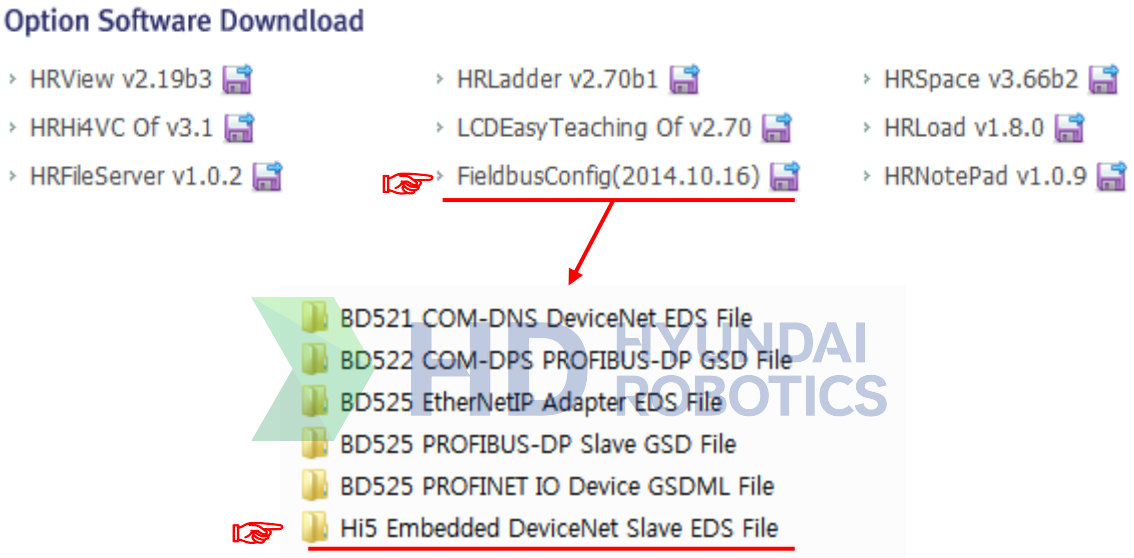

Figure 2.2 Embedded DeviceNet slave EDS file download

For further details on EDS installation, refer to the DeviceNet master product manual.

2.5. License of the embedded DeviceNet

A license is needed to use the Hi5a embedded DeviceNet. The license can be provided in the following methods.

- Through a BD574 CAN extension board mounted on the BD511 main board
  If the BD574 board is installed on the BD511 main board, DeviceNet can be used without the need for entering a license key separately [Refer to 3.1. CAN port of the embedded DeviceNet → “Use the BD574 CAN port”].

- By entering a license key
  If a BD574 board is not installed on the BD511 main board, it is required to register a license key separately. Regarding the license key, you can contact our sales department for inquiry.

  (1) Select 『[F2]: System』 → 『2: Control parameter』 → 『10: Register license key of option function』.

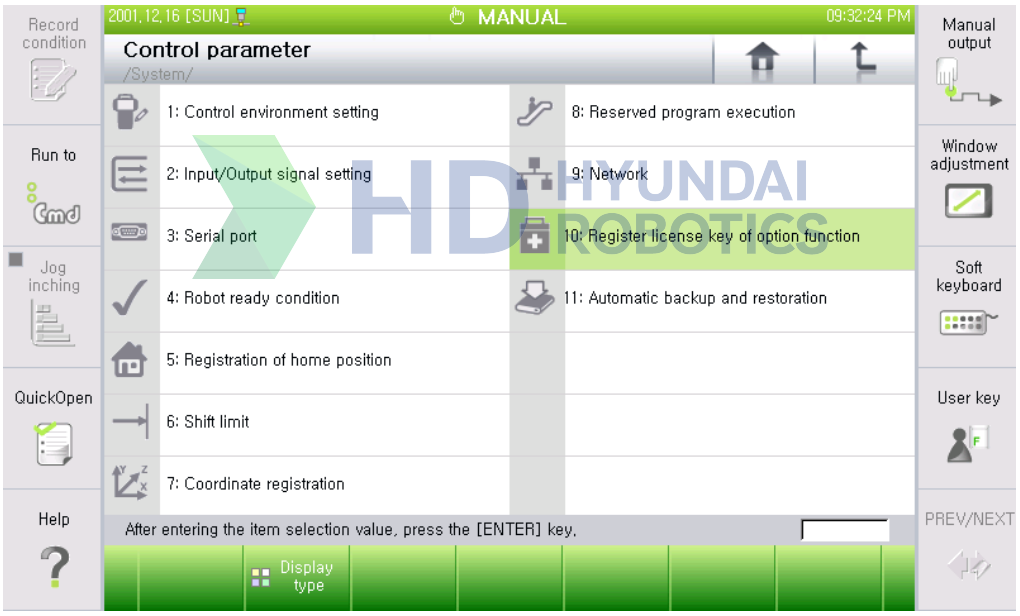

Figure 2.3 Menu for register license key of option function

(2) Set the Embedded Fieldbus (DeviceNet) item to be “Enable”, and enter the license key and then select the 『[F7]: Complete』 key.

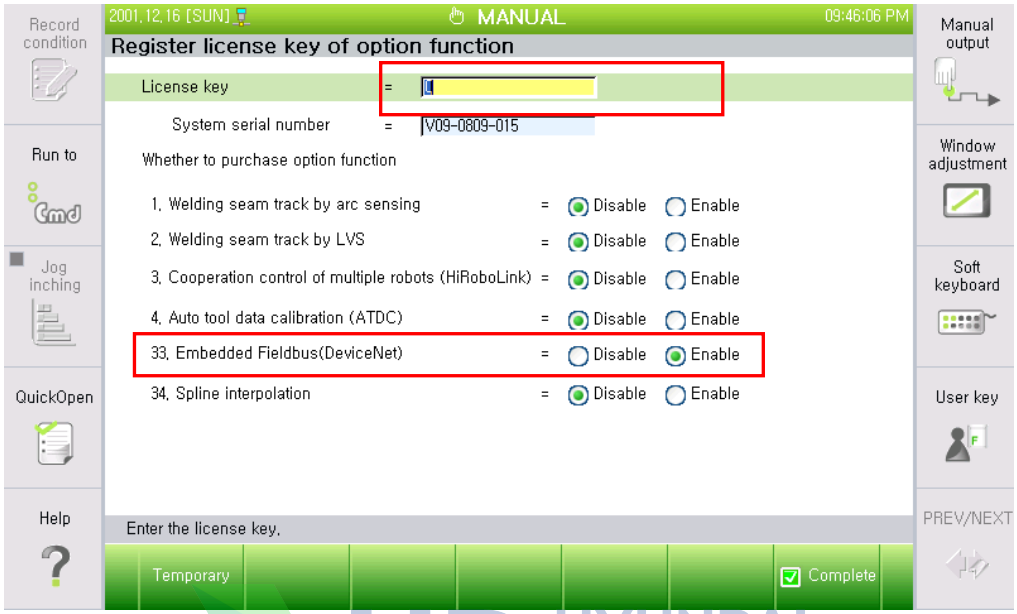

Figure 2.4 License key registration

(3) A temporary license key can be used for one month until an official license key is issued. After setting the Embedded Fieldbus(DeviceNet) to be valid, users need to select 『[F1]: Temporary』. Then the temporary license key will be entered.

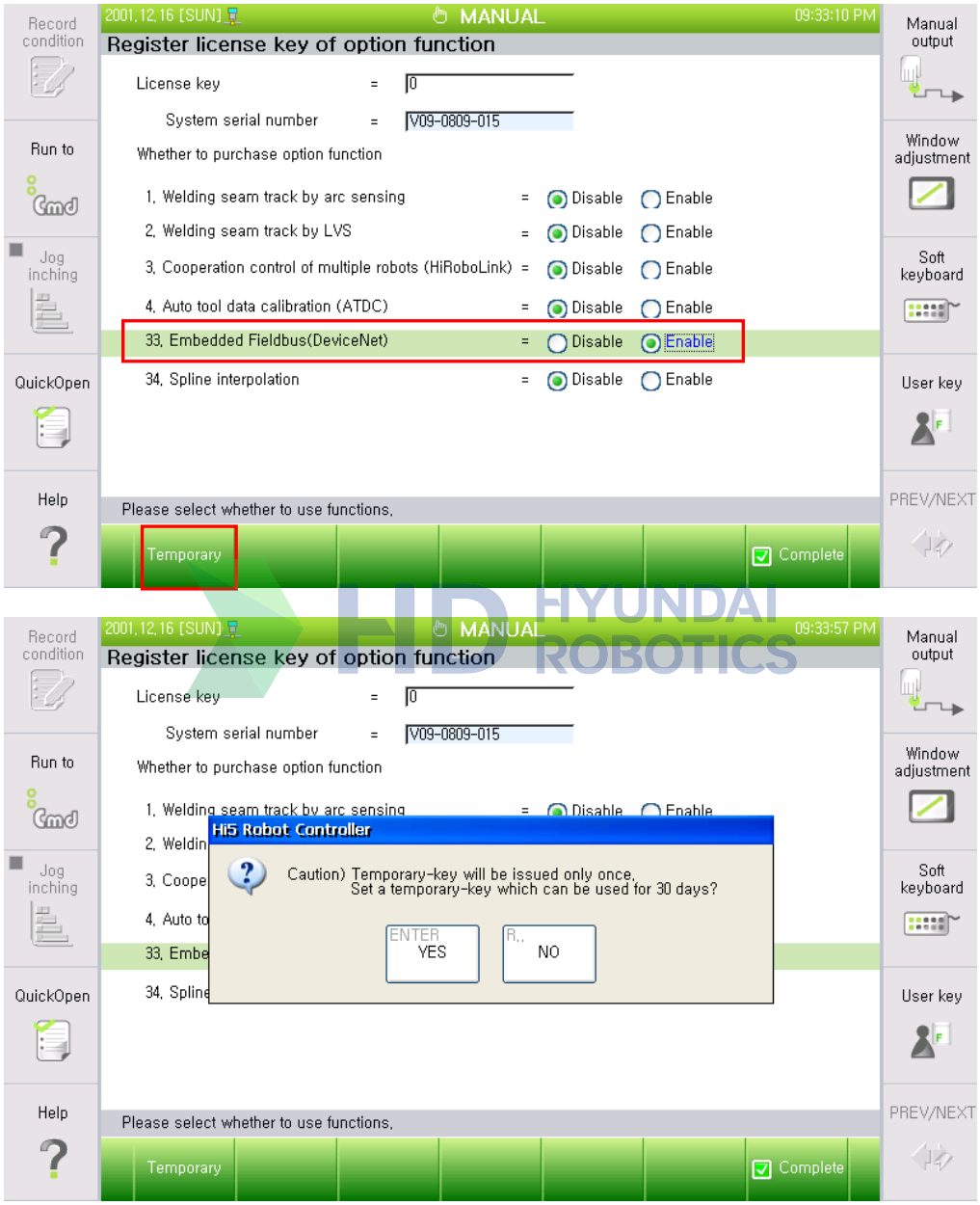

Figure 2.5 Temporary key creation

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3
DeviceNet
Connection

3.1. CAN port of the embedded DeviceNet

DeviceNet is the CAN-based industrial communication standard, and the Hi5a controller provides two CAN ports for the embedded DeviceNet.

One CAN port is embedded in the main board (BD511), and the CAN port can be added by installing the additional BD574 board.

- Main board (BD511) CAN port

  Embedded DeviceNet can be used through the CAN port mounted on the main board (BD511). In this case, connect the DeviceNet cable to the BD5B2 board because the main board (BD511) has already been connected to the BD5B2 board by the CAN cable of the controller.

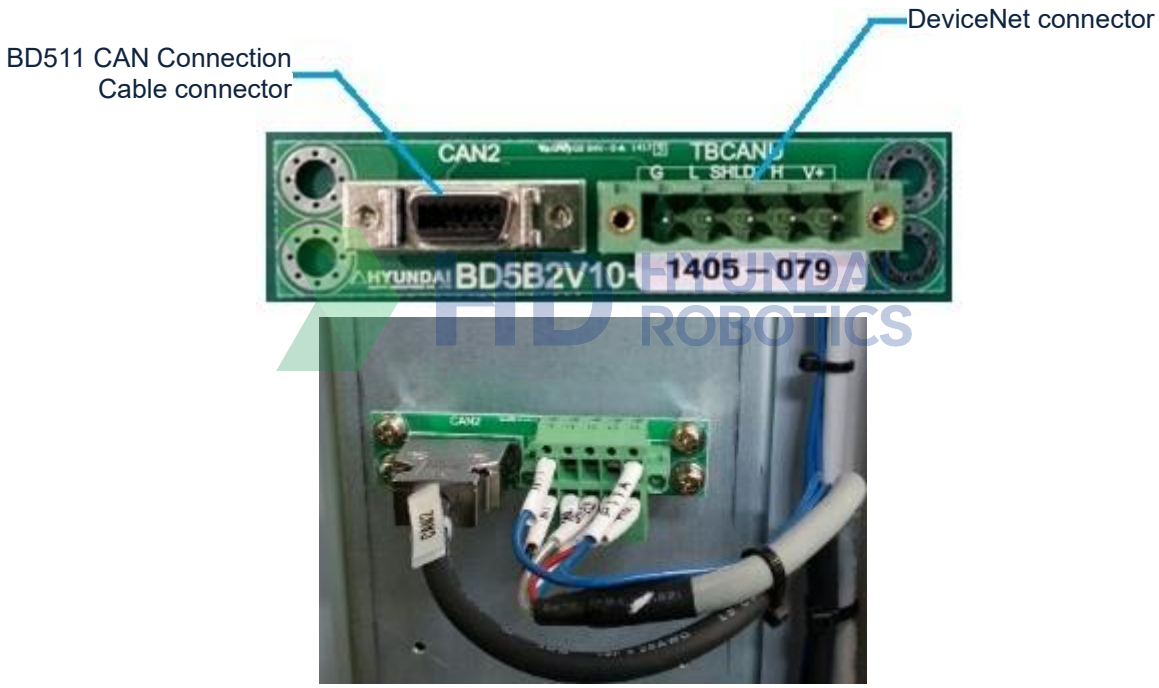


Figure 3.1 BD5B2 Board

The BD5B2 terminal board is located on the right plate when opening a controller door.

For further details on DeviceNet cable connection, refer to [3.2. Connect DeviceNet to the BD5B2 board].

- Using the CAN port of BD574

  The BD574 board can be mounted on the main board (BD511) optionally. In this case, connect the DeviceNet cable directly to the BD574 board.

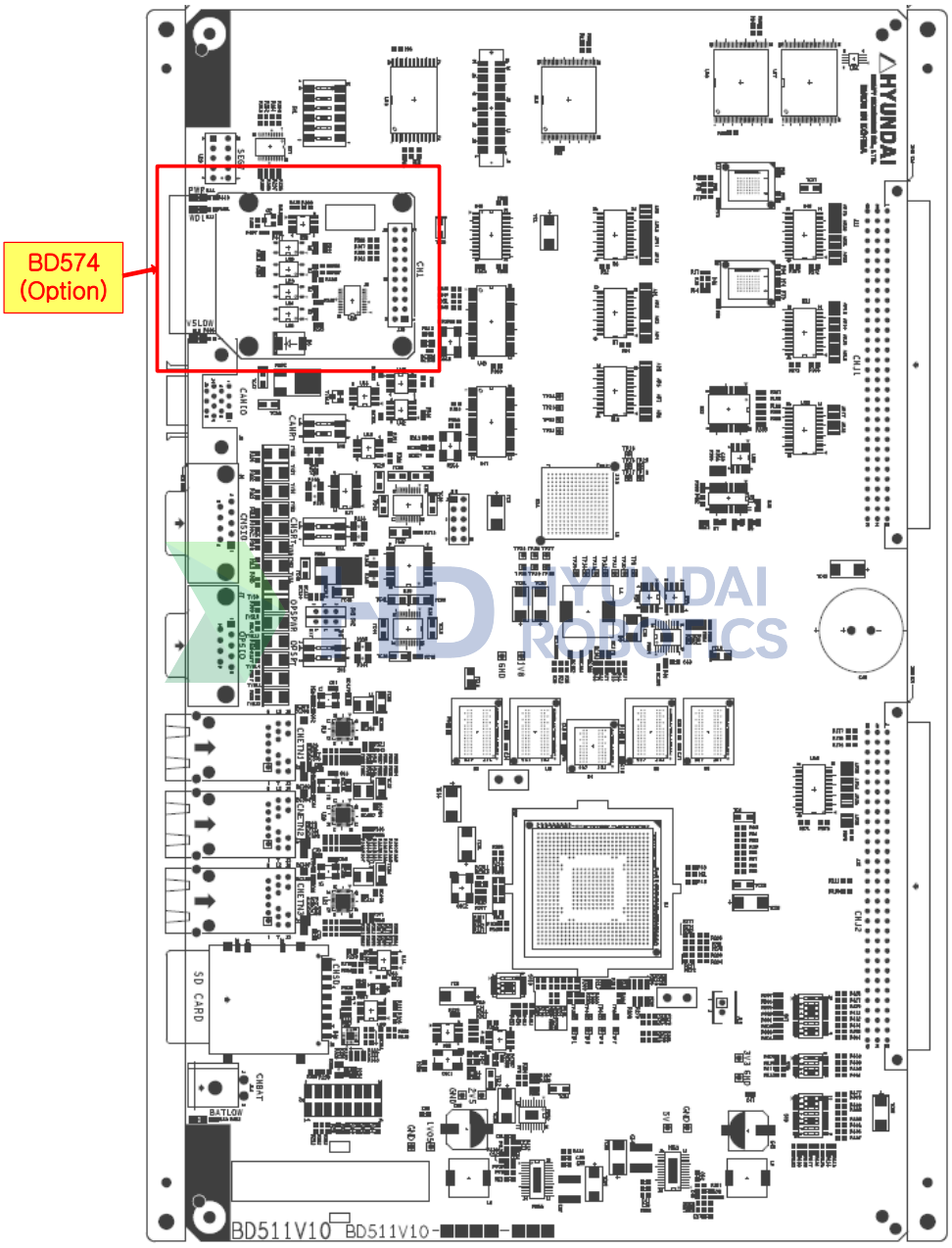


Figure 3.2 BD574 Board

3.2. Connect DeviceNet to the BD574 Board

Follow the next procedure to use the embedded DeviceNet master or slave function through the BD574 board.

(1) Connect the DeviceNet cable to the 5pin open-style connector of the BD574 board, as shown in the picture below.

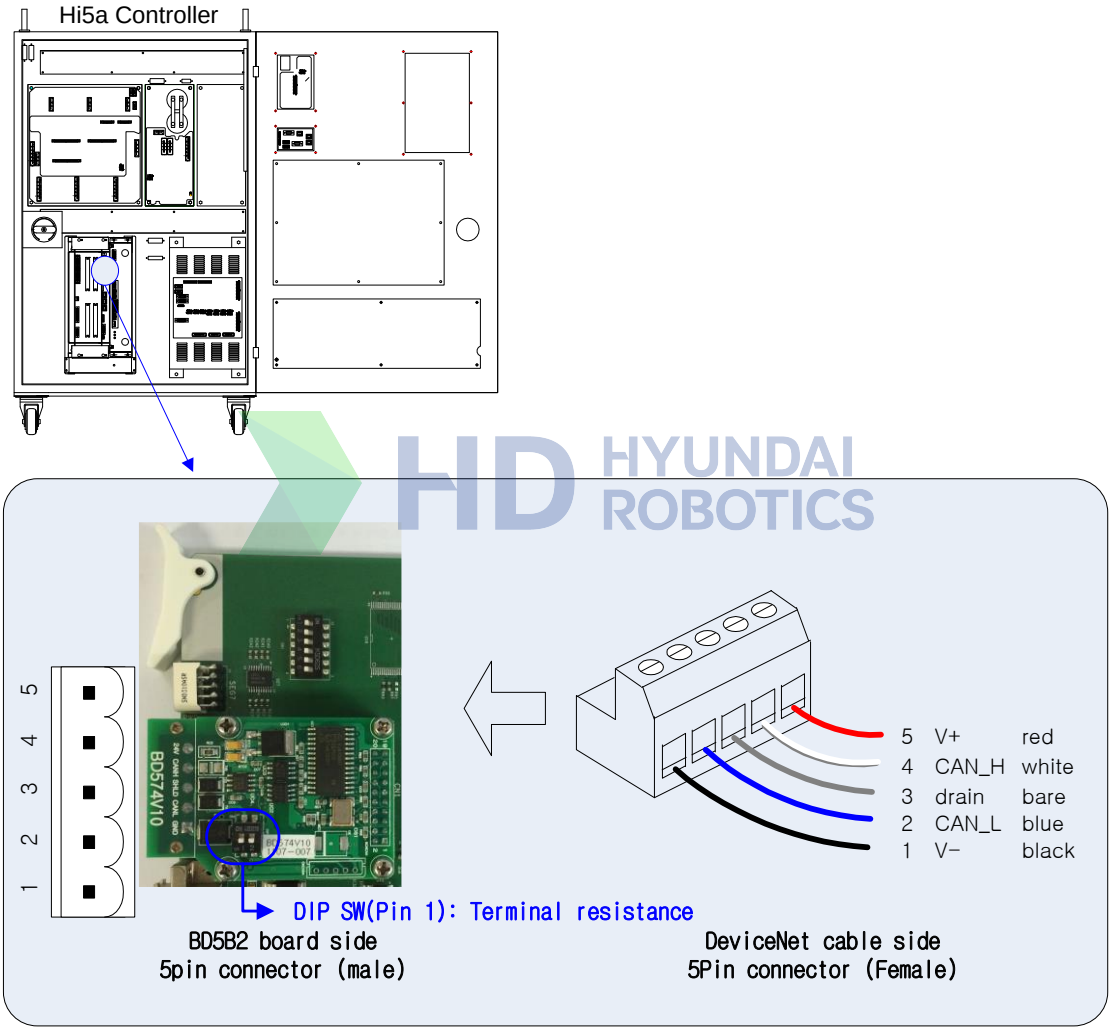
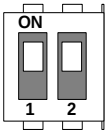


Figure 3.3 Connect DeviceNet to the BD574 board

Turn on the terminating resistor switch pin no.1 of the BD574 board when the Hi5a controller is the terminal of the DeviceNet network. It is not required to install it separately on the outside because the terminating resistor is mounted on the BD574 board.

Table 3-1 BD574 terminating resistor switch

Switch No.		**1**	2
Setting Content	**OFF**	**Embedded DeviceNet terminating resistor OFF**	User CAN terminating resistor OFF
	ON	**Embedded DeviceNet terminating resistor ON**	User CAN terminating resistor ON
Switch appearance			

(2) Select CAN2(BD574) for the CAN port in the embedded DeviceNet setting of the teach pendant. (Refer to “4.1. Embedded DeviceNet master Info and setting”, “4.2. Embedded DeviceNet Slave Info and setting”)

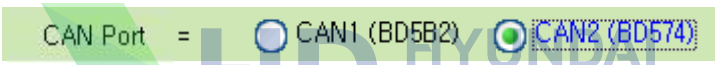


Figure 3.4 Select CAN2(BD574)

3.3. Connect DeviceNet to the BD5B2 board

Follow the next procedure to use the embedded DeviceNet master or slave function through the BD5B2 board.

(1) Connect the DeviceNet cable to the 5pin open-style connector of the BD5B2 board, as shown in the picture below.

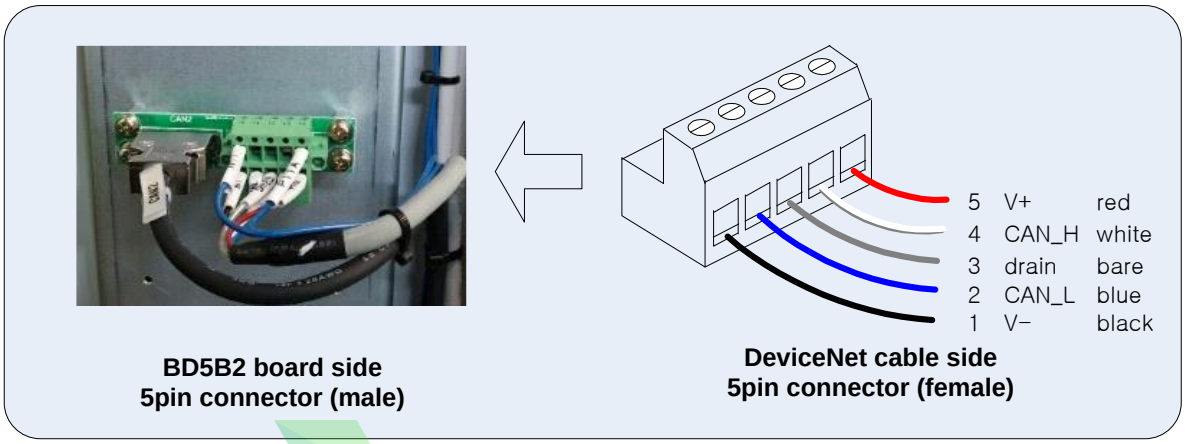


Figure 3.5 Connect DeviceNet to the BD5B2 board

(2) Turn on the terminating resistor switch pin no.2 ($CANR_T$) of the BD511 main board when the Hi5a controller is the terminal of the DeviceNet network.

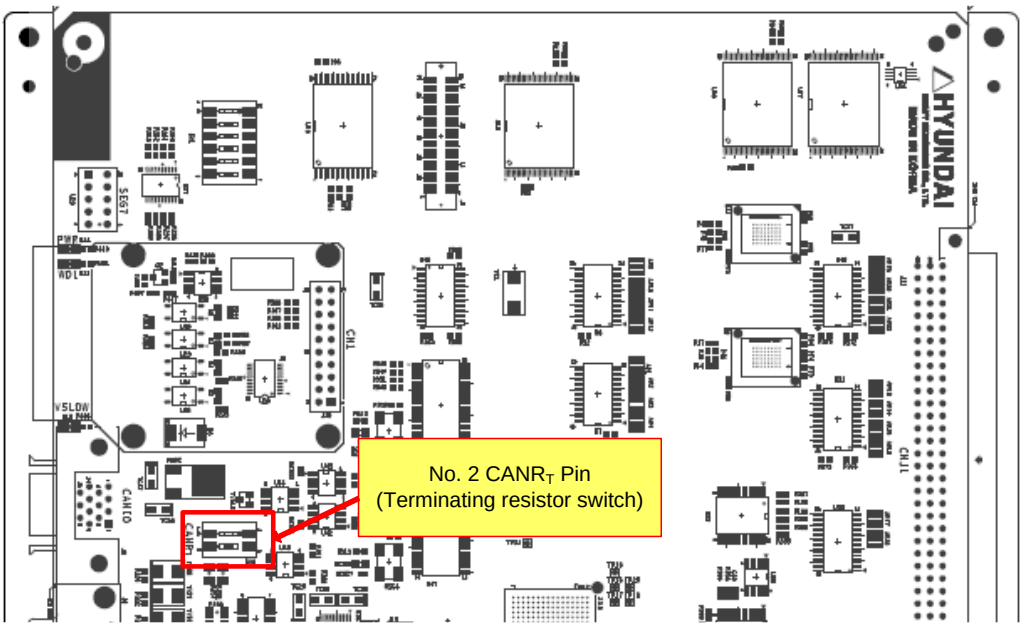
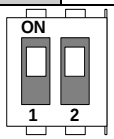


Figure 3.6 BD511 DeviceNet terminating resistor switch

Table 3-2 BD511 terminating resistor switch

Switch No.		1	2
Setting Content	OFF	System CAN terminating resistor OFF	Embedded DeviceNet terminating resistor OFF
	ON	System CAN terminating resistor ON	Embedded DeviceNet terminating resistor ON
Switch appearance			

(3) Select CAN1(BD5B2) for the CAN port in the embedded DeviceNet setting of the teach pendant. (Refer to “4.1. Embedded DeviceNet master Info and setting”, “4.2. Embedded DeviceNet Slave Info and setting”)

Figure 3.7 Select CAN1(BD5B2)

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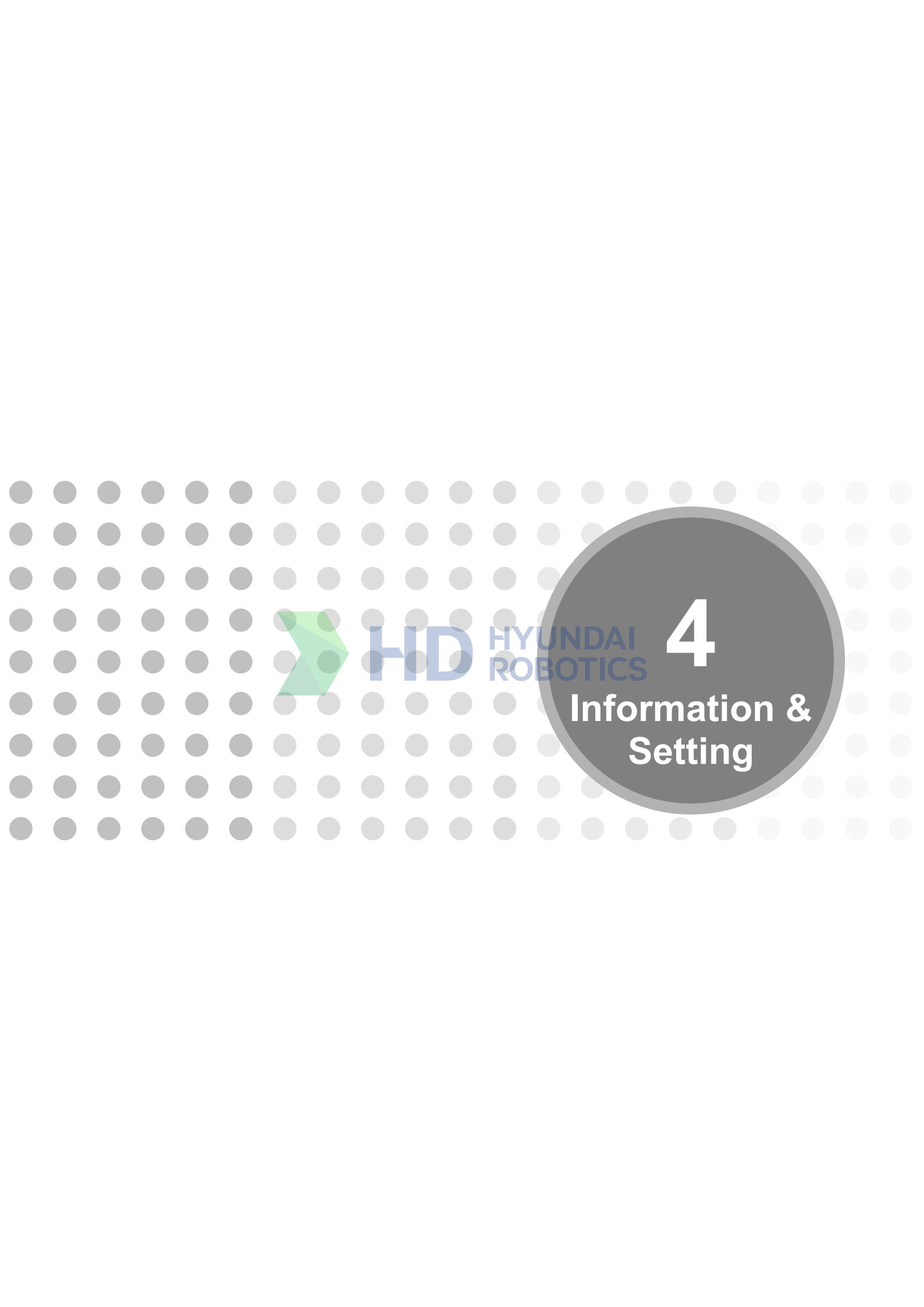
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4
Information &
Setting

4.1. Embedded DeviceNet master Info and setting

Set the network parameters, such as communication speed and the CAN port, and configure the connected slaves to use the embedded DeviceNet master function. Perform the next procedure.

(1) Execute the item. 『[F2]: System』 → 『2: Control parameter』 → 『2: Input/Output signal setting』 → 『13: Embedded DeviceNet slave info and setting.

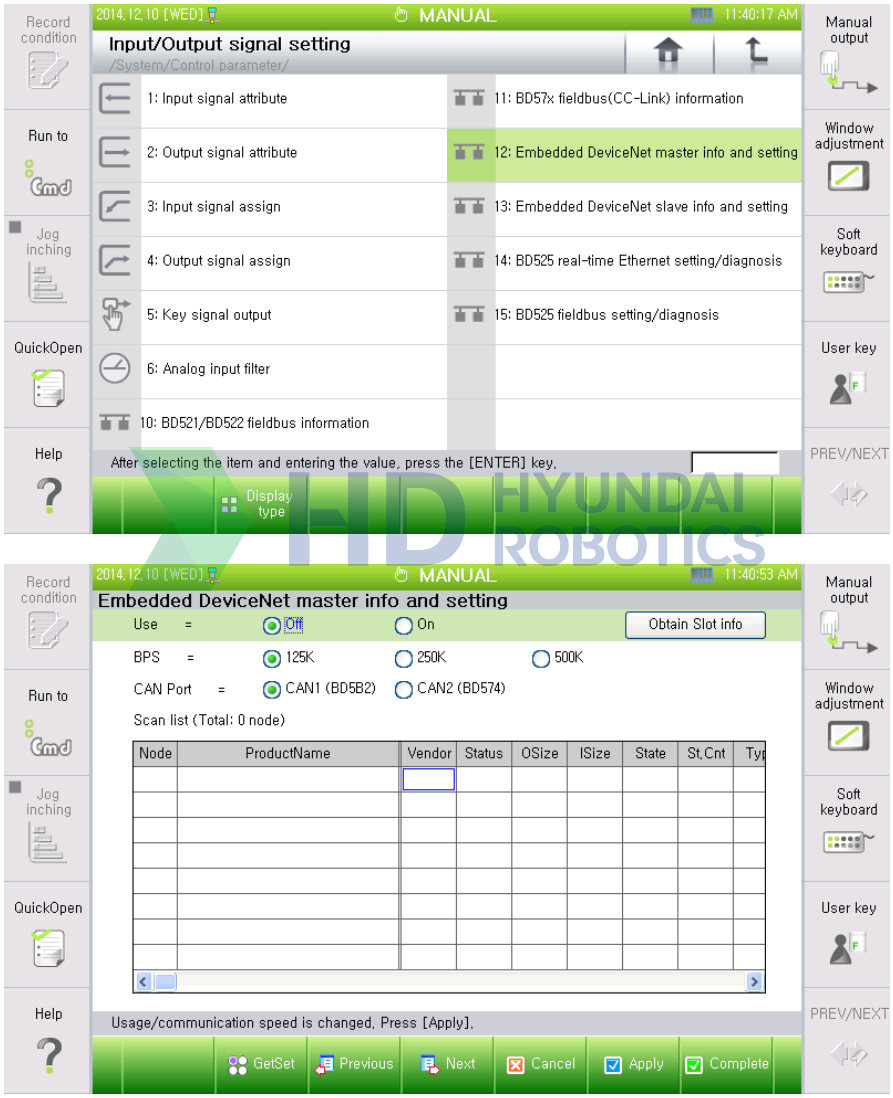


Figure 4.1 Embedded DeviceNet master information and setting menu

(2) Select the communication speed and the CAN port as well as “On” for the use, then click the “[F6]: Apply” button.

(3) Click the “[F1]: Scan node” button to search slaves that are connected to the Hi5a controller DeviceNet master.

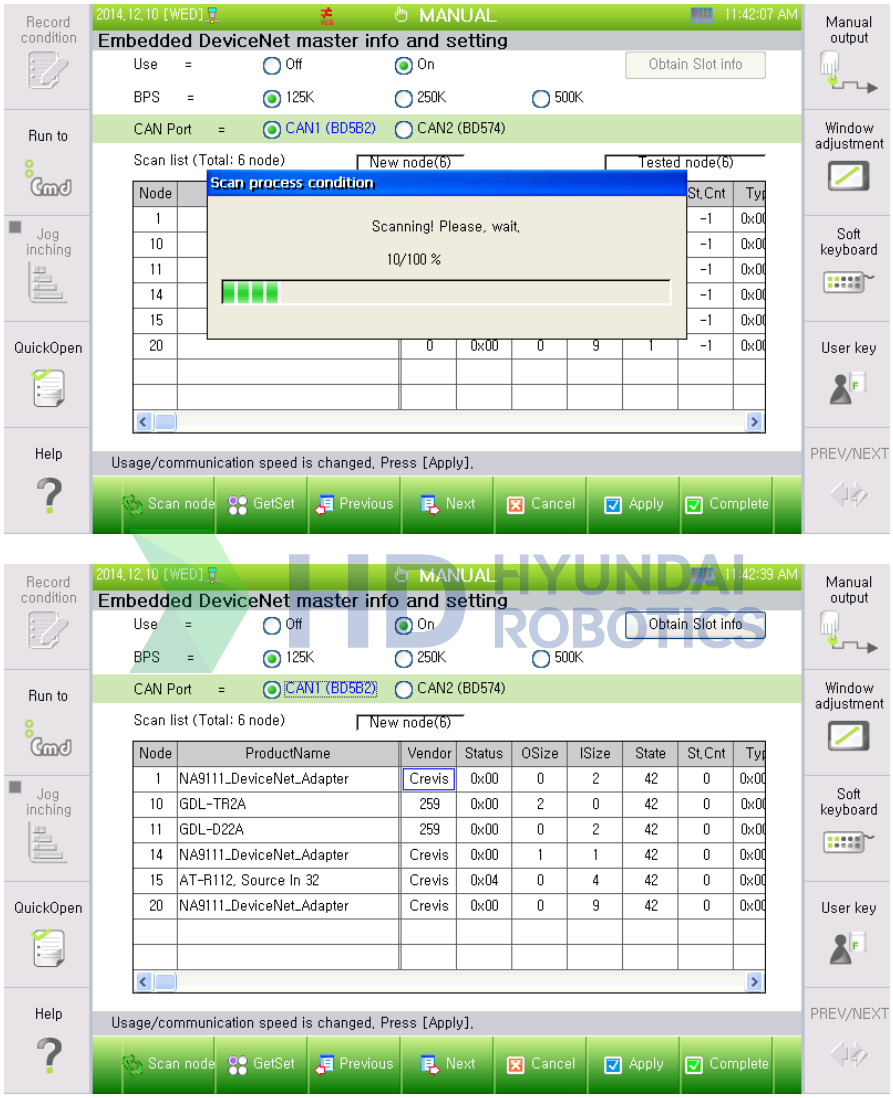


Figure 4.2 Embedded DeviceNet master node search

(4) Click the “[F6]: Apply” button to save searched slave information in the controller.

Figure 4.3 Save the embedded DeviceNet master scan result

(5) Slaves already searched, and the DeviceNet communication has been opened. The node number, product name, manufacturer, and I/O data size can be checked from the scan list information. Major information displayed on the scan list are as follows.

- **Node: DeviceNet Node No. (MAC ID)**
- ProductName: product name
- Vendor: manufacturer ID
- **Osize: size of output data (Bytes)**
- **Isize: size of input data (Bytes)**
- **State: DeviceNet state (42: DeviceNet IO Connection normal)**
- St.Cnt: number of accumulated state change
- Type: Device Type
- Code: Device Code
- Rev: product version (Revision Number)
- Serial Nr.: slave serial number (serial number)
- Ex#1~#16: extension IO information of the slave node (only some products will be supported)

Scan list (total: 6 nodes)

Node	ProductName	Vendor	Status	OSize	ISize	State	St.Cnt	Typ
1	NA9111_DeviceNet_Adapter	Crevis	0x00	0	2	42	0	0x00
10	GDL-TR2A	259	0x00	2	0	42	0	0x00
11	GDL-D22A	259	0x00	0	2	42	0	0x00
14	NA9111_DeviceNet_Adapter	Crevis	0x00	1	1	42	0	0x00
15	AT-R112, Source In 32	Crevis	0x04	0	4	42	0	0x00
20	NA9111_DeviceNet_Adapter	Crevis	0x00	0	9	42	0	0x00

Figure 4.4 Embedded DeviceNet master scan list

(6) Click the “[F2]: GetSet” button to perform an Explicit message communication with a specific node.

Type the number in the dialog box or click [Enter] in the combo box to enter an Explicit message request information, such as MAC ID, Service, or Class, and then click the Send button.

The following Response message will be shown at the bottom when message communication is performed normally.

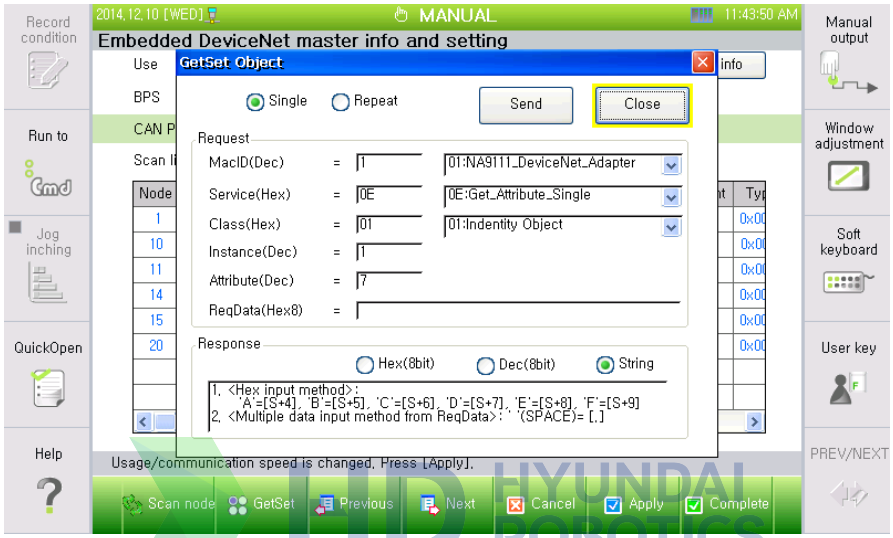


Figure 4.5 Explicit message

(7) The Embedded DeviceNet master network configuration (scan list) can be edited manually. Slaves can be added or deleted manually from the scan list, and the size of specific slave I/O data can be changed.

Edit the DeviceNet network configuration according to the next procedure.

① Click the embedded DeviceNet master information and the “Edit Node” button in the setting screen.

Figure 4.6 Edit Node

※ **The node editing function is supported by controller SW version V40.06-00 or more.**

② Enter the node number, node input data size, and node output data size in the Node Edit dialog box, and then click the “Add/Edit” button to add a node.

If the node that is already in the scan list is added, then the size of the corresponding I/O data will be changed as newly entered information.

Enter the node number, and then click the “Delete” button to delete the node.

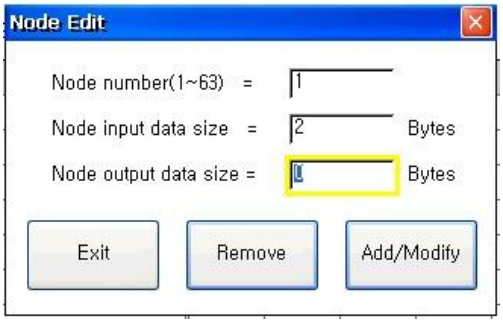


Figure 4.7 Node editing dialog box

③ The ProductName of the manually added node will be displayed as “Unknown,” and some information of the node, such as Vendor and Type, will be initialized as 0.

Figure 4.8 Scan list after adding the node

4.2. Embedded DeviceNet Slave Info and setting

Set the parameters, such as communication speed and the CAN port, and configure the connected slaves to use the embedded DeviceNet slave function. Follow the next procedure.

(1) Select 『[F2]: System』 → 『2: Control parameter』 → 『2: Input/Output signal setting』 → 『13: Embedded DeviceNet slave Info and setting』.

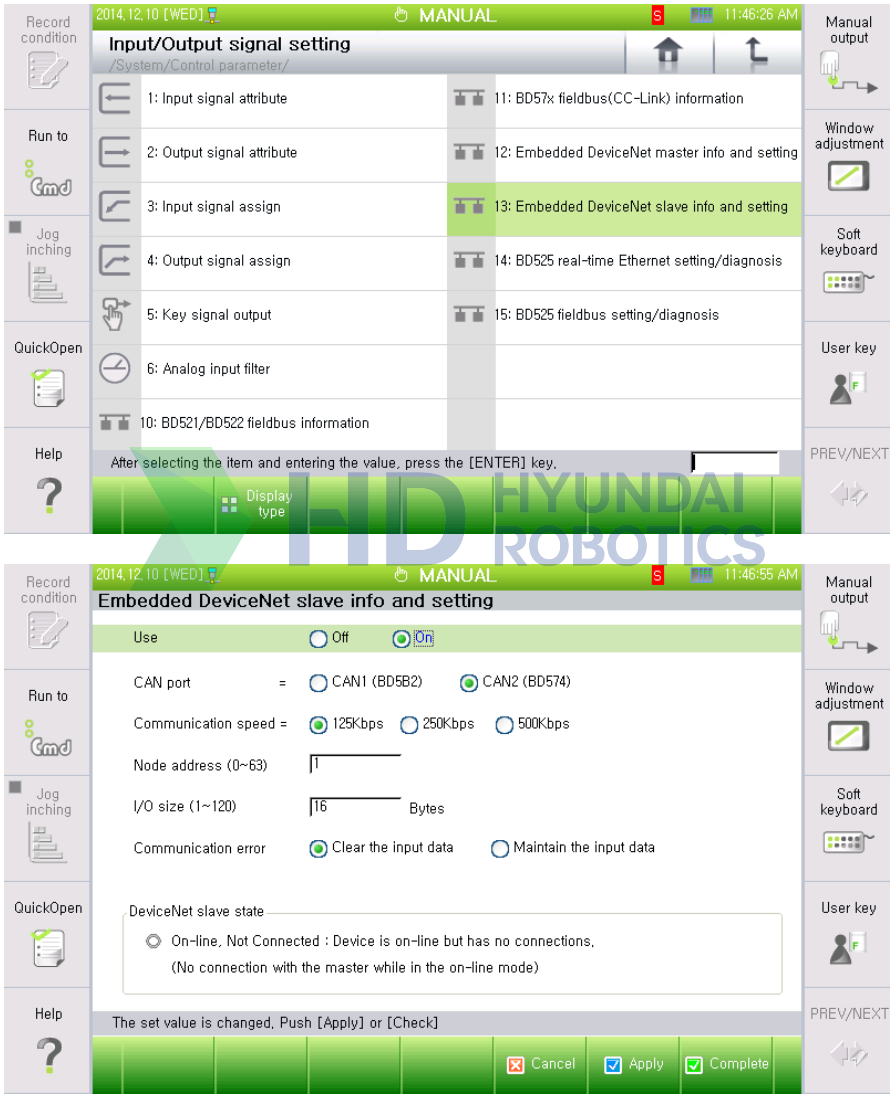


Figure 4.9 Information and the setting menu of the embedded DeviceNet slave

(2) Select the following items and “On” to use them, and then click the “[F6]: Apply” button to operate the DeviceNet slave function.

- Use: For selecting whether to activate the DeviceNet slave function.
  - On: activate the embedded DeviceNet slave function
  - Off: deactivate the embedded DeviceNet slave function
- CAN port: set the CAN port to connect to the embedded DeviceNet slave communication.
  - CAN1(BD5B2): connect DeviceNet to the BD5B2 board
  - CAN2(BD574): connect DeviceNet to the BD574 board
- Communication speed:
  For setting the communication speed of DeviceNet. The communication speeds that can be use for the embedded Device slave are 125Kbps, 250Kbps and 500Kbps.
- Node address:
  For setting the MAC ID (Node address) of the embedded DeviceNet slave. The allowable range for setting the node address is 0~63.
- Size of input and output data:
  For setting the size of the input and output data of the embedded DeviceNet slave. The allowable range for setting the size of input and output data is 1~120.
- Communication error handling:
  An option for handling input data (FB5.X object) when a communication error occurs to DeviceNet.
  - Clear the input data: When a communication error occurs, the FB5.X object will clear the value to be “0”.
  - Keep the input data: When a communication error occurs, the FB5.X object will maintain the existing value.
- DeviceNet slave status: For showing the network status of the embedded DeviceNet slave.

The embedded DeviceNet slave function cannot be used while the BD570x CC-Link function is being used.

4.3. Input signal assign

The state or motion of the controller can be controlled through the embedded DeviceNet input signal. It is required to assign the input signal number for each remote control item.

(1) Execute 『[F2]: System』 → 『2: Control parameter』 → 『2: Input/Output signal setting』 → 『3: Input signal assign』.

(2) Enter the "**.node number.signal number**", and then press the [Enter] button to assign the embedded DeviceNet master input signal.

The picture below shows an example to assign the input signal no. 4 of node no. 3 to the remote mode. Enter .3.4 in the signal input blank, and then press the [Enter] button to input FN3.4 and assign FN3.X4.

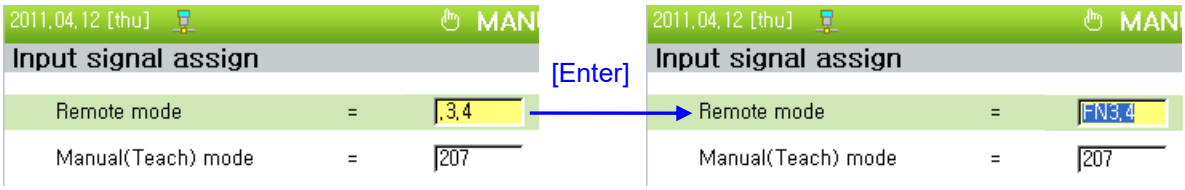


Figure 4.10 Embedded DeviceNet master input signal assignment

(3) Enter "**object number(5).signal number**", and then press the [Enter] button to assign the embedded DeviceNet slave input signal.

The picture below shows an example to assign the embedded DeviceNet slave input signal no. 4 to the remote mode. Enter 5.4 in the signal input blank, and then press the [Enter] button to input FB5.4 and assign FB5.X4 to the remote mode.

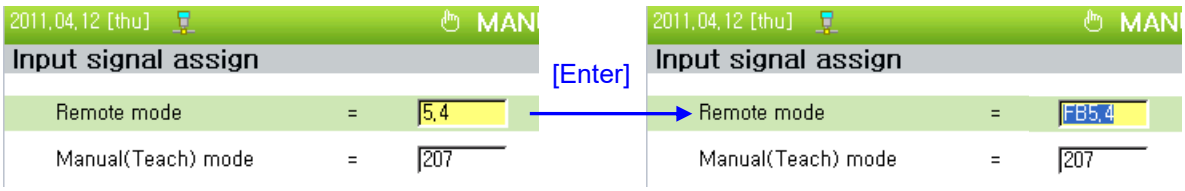


Figure 4.11 Embedded DeviceNet slave input signal assignment

4.4. Output signal assign

Deliver event information that occurred from the controller or state information to the outside through the embedded DeviceNet output signal. Assign the output signal number for each of the information for this.

(1) Execute “[F2]: System” → “2: Control parameter” → “2: Input/output signal setting” → “4: Output signal assign.”

(2) Enter the “.**node number.signal number”,** and then press the [Enter] button to assign the embedded DeviceNet master output signal.

The picture below shows an example to assign the output signal no.4 of node no.3 to the robot preparation OK signal. Enter .3.4 in the signal input blank, and then press the [Enter] button to input FN3.4 and assign FN3.Y4.

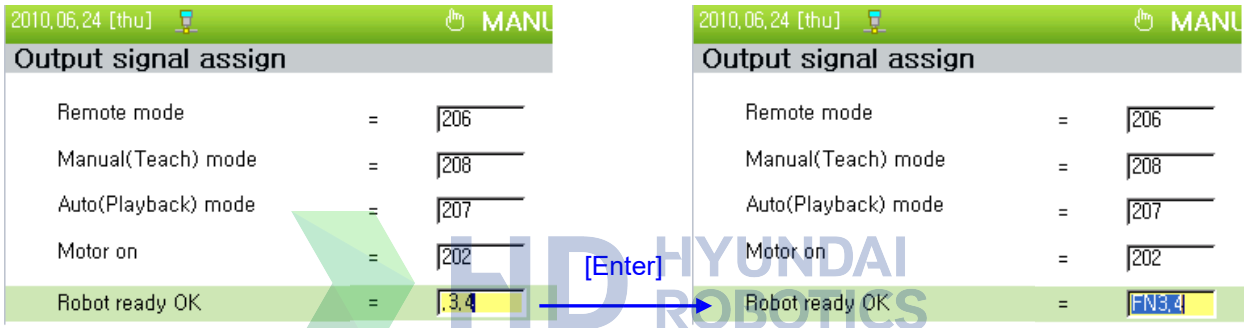


Figure 4.12 Embedded DeviceNet master output signal assignment

(3) Enter **object number (5). signal number,** and then press the [Enter] button to assign the embedded DeviceNet slave output signal.

The picture below shows an example of assigning the embedded DeviceNet slave output signal no. 4 to the remote mode.
Enter 5.4 in the signal input blank, and then press the [Enter] button to input FB5.4 and assign FB5.Y4.

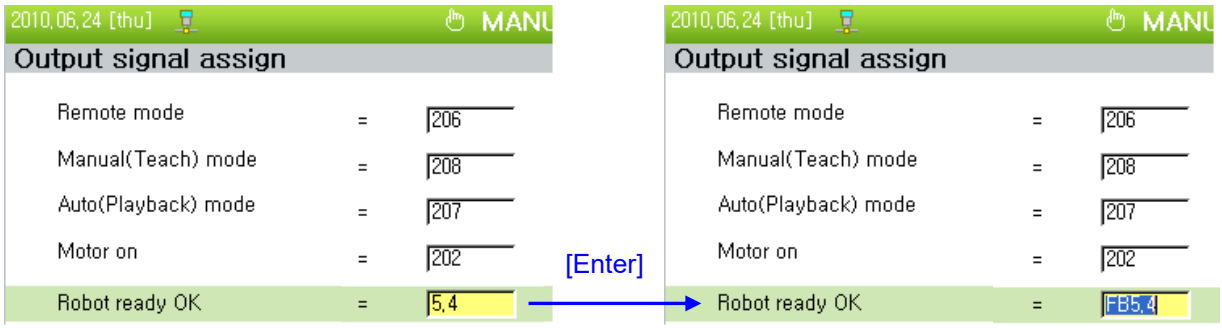
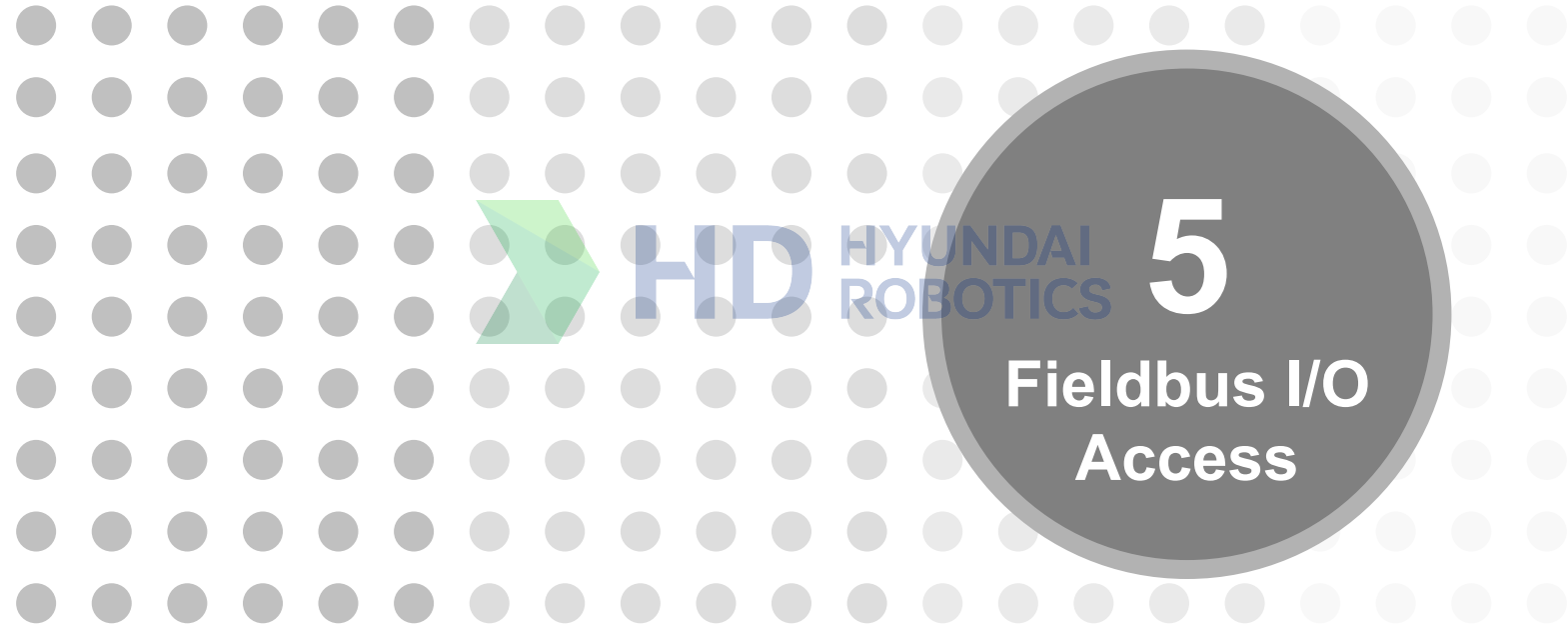


Figure 4.13 Embedded DeviceNet slave output signal assignment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5
Fieldbus I/O
Access

5.1. Embedded DeviceNet I/O

The Hi5a robot controller embedded DeviceNet I/O relationship is the same as picture 5.1 Embedded DeviceNet I/O relationship diagram.

IO is assigned to the FN object for the embedded DeviceNet master, and IO is assigned to the FB5 object for the slave. For further details, please refer to the embedded PLC function manual.

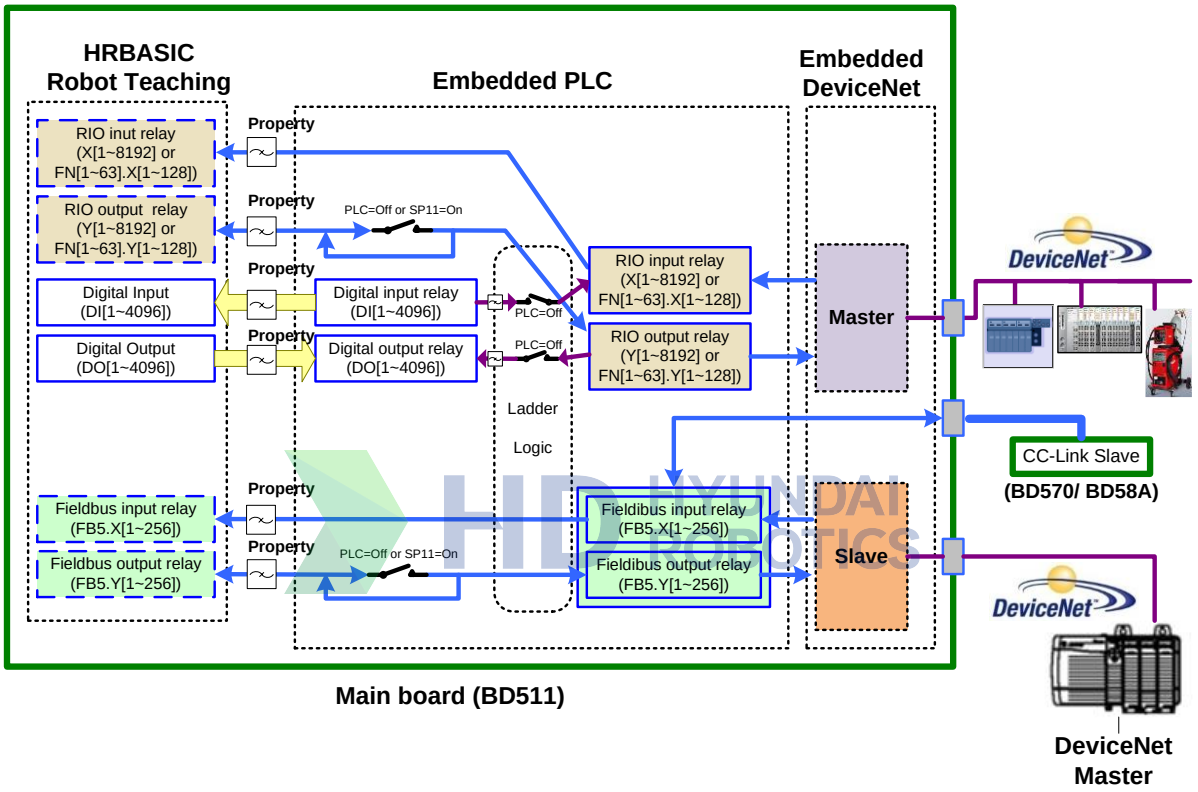

Figure 5.1 Embedded DeviceNet I/O relationship diagram

Reference

※ IO will be mapped to the same FB5 object for the CC-Link of the Hi5a controller and the embedded DeviceNet slave.
Therefore, **CC-Link and Embedded DeviceNet Slave cannot be used at the same time**.

5.2. Embedded DeviceNet Master IO Map

One of each FN object will be assigned by the nodes, connected to the embedded DeviceNet master, and the FN object will be configured by 128 bit. IO will be mapped to the FNn object for node number *n* (*n* = 1–63) slave.

- **FNn.X1–128: node number *n* input data of slave (Hi5a controller ← slave)**
- **FNn.Y1–128: node number *n* output data of slave (Hi5a controller → slave)**

Table 5-1 Embedded DeviceNet master relay

Relay Title	Points	Relay(1bit)	Relay(Byte, Word)	(Long, FLoat)
RIO Input / Output Relay	Input 8192 points 128 points per node (Max 64 node)	FN1~64.**X**1~128 (or **X**1~8192)	FN1~64.**XB**1~16 (or **XB**1~1024)	FN1~64.**XL**1~4 (or **XL**1~256)
			FN1~64.**XW**1~8 (or **XW**1~512)	FN1~64.**XF**1~4 (or **X**F1~256)
	Output 8192 points 128 points per node (Max 64 node)	FN1~64.**Y**1~128 (or **Y**1~8192)	FN1~64.**YB**1~16 (or **YB**1~1024)	FN1~64.**YL**1~4 (or **YL**1~256)
			FN1~64.**YW**1~8 (or **YW**1~512)	FN1~64.**YF**1~4 (or **YF**1~256)

When the slave (node number *n*) that has input or output data that exceeds 128 bit is connected, the FX object of the next slave node (node number *n*+1) will be occupied. In this case, the DeviceNet communication of the next slave will not be connected to the Hi5a embedded DeviceNet master.

For example, when the output of node no. 3 is 136 bit, then slave no. 3 will occupy FN3, FN4. Therefore, it cannot be connected to the embedded DeviceNet master of the Hi5a controller even if slave no. 4 is physically connected to the DeviceNet.

5.3. Embedded DeviceNet Slave IO Map

The embedded DeviceNet slave function uses the FB5 object as IO. It has 960 X inputs and 960 Y outputs, and it can be approached by each of the five types, as shown in the table below.

Table 5-2 the embedded DeviceNet slave relays

Classification	Command syntax	Max. signal number	Description and example
Output	FB5.Y{Signal No.}	960	Bit signal output
	FB5.YB{Signal No.}	120	Byte signal output
	FB5.YW{Signal No.}	60	Word signal output
	FB5.YL{Signal No.}	30	Double word signal output
	FB5.YF{Signal No.}	30	Float signal output
Input	FB5.X{Signal No.}	960	Bit signal output
	FB5.XB{Signal No.}	120	Byte signal output
	FB5.XW{Signal No.}	60	Word signal output
	FB5.XL{Signal No.}	30	Double word signal output
	FB5.XF{Signal No.}	30	Float signal output

5.4. Embedded PLC System Memory

Various state information of the embedded DeviceNet master can be checked through the system memory of the embedded PLC. For further details, please refer to the embedded PLC function manual.

Table 5-3 Embedded PLC system memory

No.	Description	Others
SW140	FN Error BitMap1 (Node00~Node15)	1:Error
SW141	FN Error BitMap2 (Node16~Node31)	
SW142	FN Error BitMap3 (Node32~Node47)	
SW143	FN Error BitMap4 (Node48~Node63)	
SW144	FN Master State*1)	
SW145	Node No. for FN error information request	
SW146	Node State*2) for the above response	

*1) Master State
0x8000(b15): 1(Used)
0x0100(b8): 1(Checking status: for 10 seconds after the Initialization & Rescan, after 2 seconds of exit from Node Set-up screen)
0x001F(b0~b4):
Master: b4: 1(RUN), 0(IDLE(PLC=STOP))
b0~b3: 0(RUNNING), 1(ResetOutOfBox), 2(InitOutOfBox), 3(ResetNormal), 4(InitNormal), 5(DupMacCheck), 6(NRFault)

*2) Node State
0x8000(b15): 1(Used Node)
0x4000(b14): 1(Unguaranteed Maker)
0x3000(b12~b13): NodeStatus(1:Standby,2:ConnectionFault,3:ConfigFault)
0x0800(b11): 1(Not IoMode)
0x03FF(b0~b9):
Slave: (Bit-field)
0x000(Online), 0x001(Offline), 0x002(IO Close), 0x004(InSizeErr), 0x008(OutSizeErr), 0x010(VenderMismatch), 0x020(TypeMismatch),0x040(CodeMismatch), 0x080(CcvMismatch), 0x100(IoTooBig), 0x200(NoConnection)

5.5. Explicit Message Communication

The Explicit message can be sent from the embedded DeviceNet master through the system memory of the embedded PLC. Follow the next procedure for Explicit message communication in the embedded PLC.

(1) Enter an Explicit message request information into SW161–SW179.

(2) Enter 0x0001 (Single Request) into SW160.

No.	Description	Others
SW160	0x0001: Explicit message request (Single Request)	1:Error
SW161	MAC ID	
SW162	Service ID	
SW163	Class ID	
SW164	Instance ID	
SW165	Attribute ID	
SW166	Request Data Size	MAX 26
SW167~SW179	Service Request data	SB333~SB358

(3) Check a response message from SW160–SW179.

No.	Description	Others
SW160	0x001X: Explicit communication is in progress. 0x0000: Explicit communication is completed. 0x002X: Explicit communication time is out. Other: Error	1:Error
SW161	MAC ID	
SW162	Service ID	
SW163	Class ID	
SW164	Instance ID	
SW165	Attribute ID	
SW166	Response Data Size	MAX 26
SW167~SW179	Service response data	SB333~SB358

① If SW160 = 0x0000, the Explicit message is completed.
Check the response of SW166–SW179.
② If SW160 = 0x001x, the Explicit message communication is in progress.
③ If SW160 = 0x002x, it is an Explicit message communication error.

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6 Monitoring

6.1. Embedded DeviceNet Master Connection Node State

The communication state of the slave nodes connected to the embedded DeviceNet master can be checked.

(1) Select the item. “[F1]: Service” → “1: Monitoring” → “15: Embedded fieldbus node state”

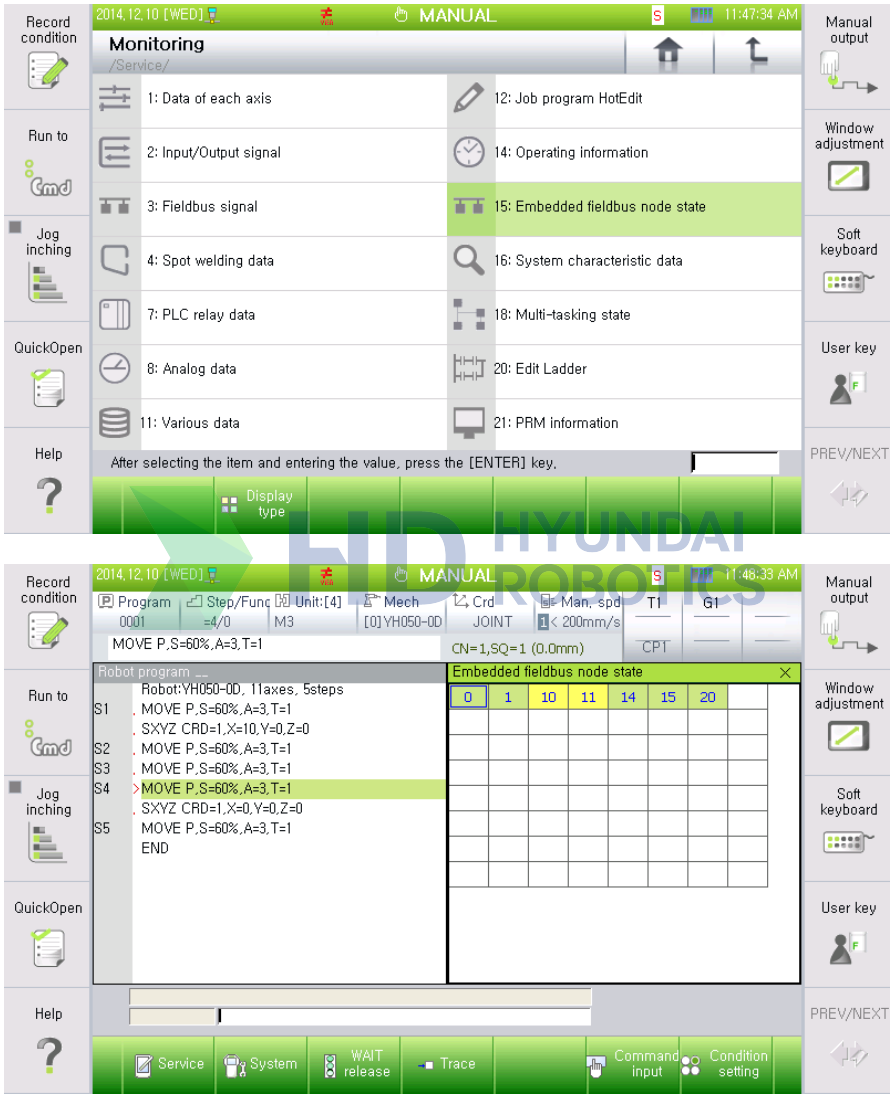


Figure 6.1 DeviceNet diagnosis

(2) The node number of the embedded DeviceNet master (MAC ID) is 0.

Select the embedded DeviceNet master, and press the [Enter] button to enter the screen of the embedded DeviceNet master setting.

The node state in the embedded fieldbus will be displayed as green when it is normal. However, the DeviceNet master stops because the embedded PLC stops, then it will be displayed as IDLE.

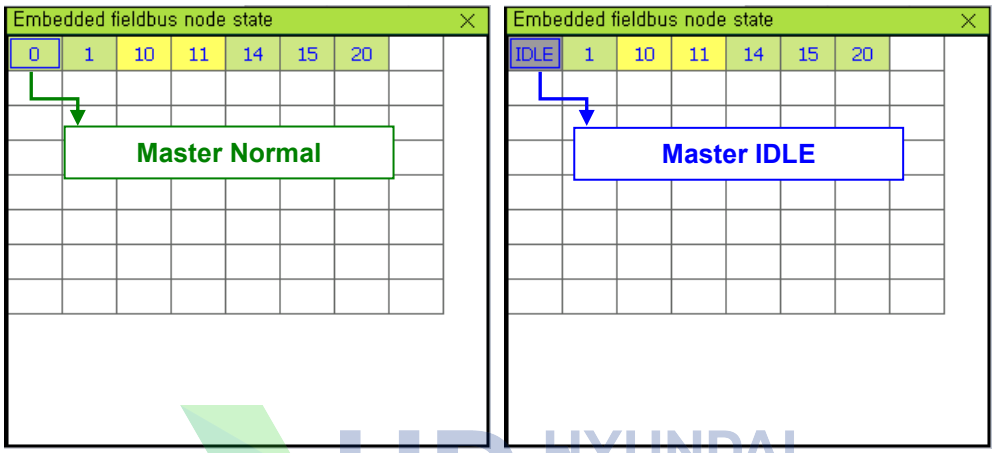


Figure 6.2 DeviceNet master state

(3) The communication state of the slaves connected to the embedded DeviceNet master will be displayed in the node number by each slave.

Green and yellow are normal communication nodes, and red is the node with communication error.
(Green is the slave product of CREVIS, and other products will be displayed as yellow.)
Select the node with communication error, and then enter the [Enter] button to display error information.

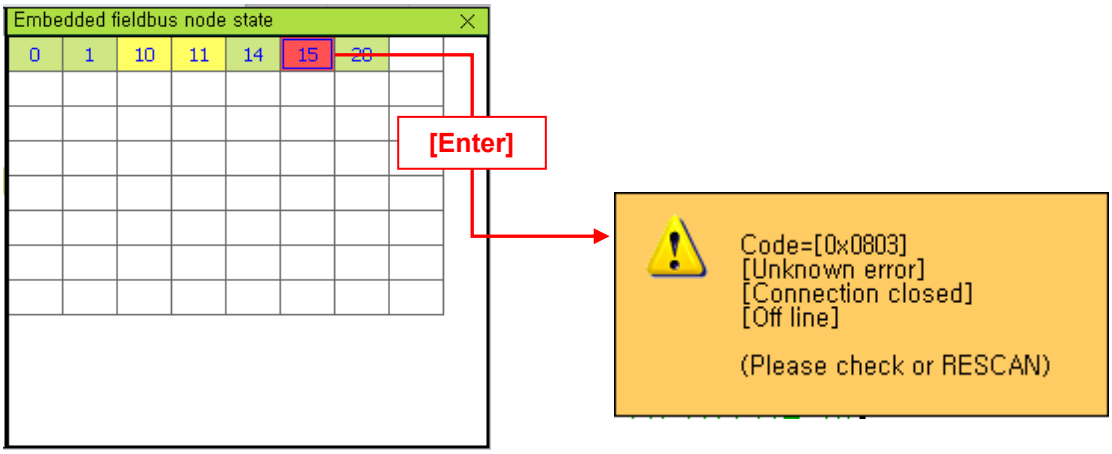


Figure 6.3 Slave State Information

(4) Select the slave node number, and press the [Enter] button to enter the IO monitoring screen of the corresponding node.

On the other hand, press the “[F1]: Node status” on the IO monitoring screen to go to the node state diagnosis screen.

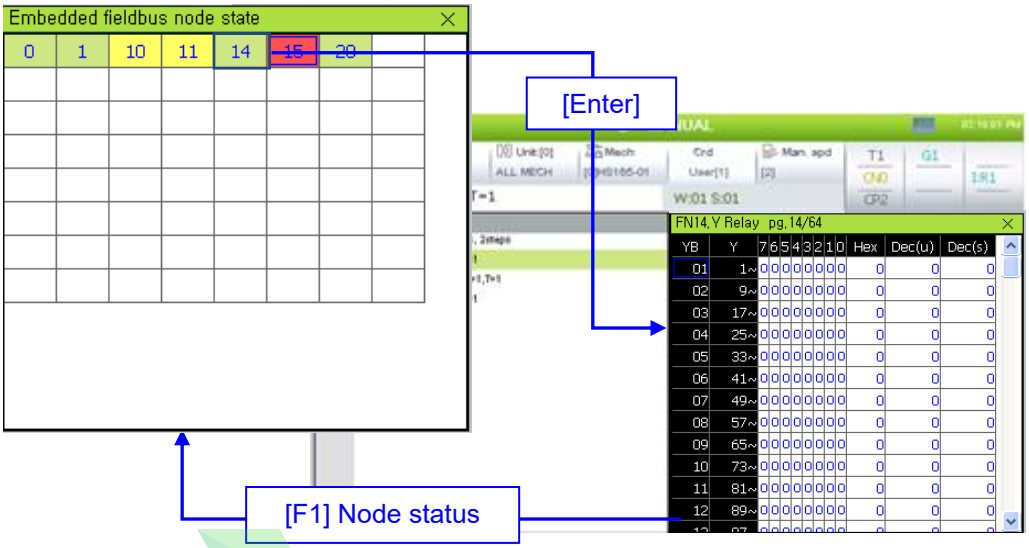


Figure 6.4 I/O monitoring screen change

6.2. Embedded DeviceNet Master IO Monitoring

The IO data (FN signal) of the embedded DeviceNet master can be monitored.

(1) Select “[F1]: Service” → “1: Monitoring” → “7: PLC Relay data” item.

Select “1: PLC X Relay (external input)” for input and “2: PLC Y Relay (external output)” for output.

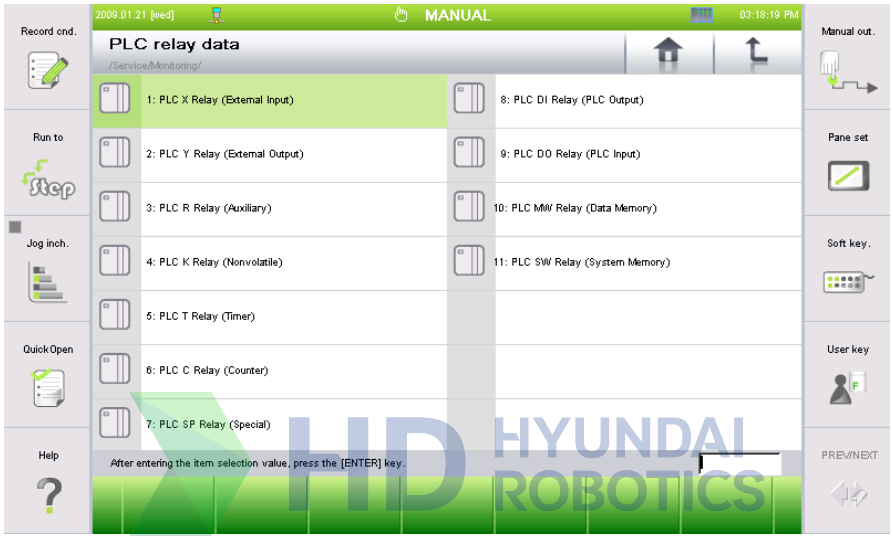


Figure 6.5 Embedded DeviceNet master IO monitoring menu

Press the “[F1]: Node status” button to go to the embedded DeviceNet master diagnosis screen.

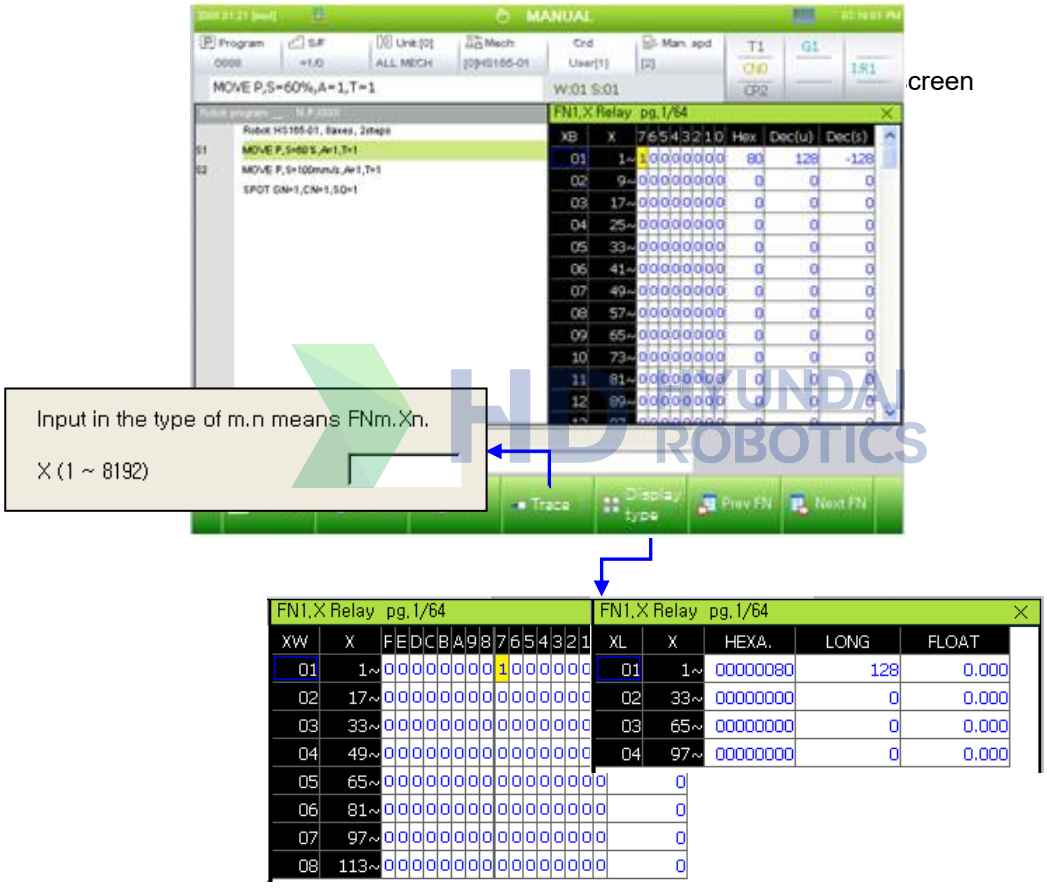
Press the “[F3]: X/Y” button to interconvert input data or output data.

Press the “[F4]: Trace” button to monitor the IO data of a specific slave.

Press the “[F5]: Display type” button to change the data display type.

Press the “[F6]: Prev FN” button to monitor the slave IO data of the previous node number.

Press the “[F7]: Next FN” button to monitor the slave IO data of the next node number.



6.3. Embedded DeviceNet Slave IO Monitoring

Follow the next procedure to monitor the embedded DeviceNet slave IO data.

(1) Select “[F1]: Service” → “1: Monitoring” → “3: Fieldbus signal.”

(2) Select “9: FB5 Fieldbus input” for input and “10: FB5 Fieldbus output” for output.

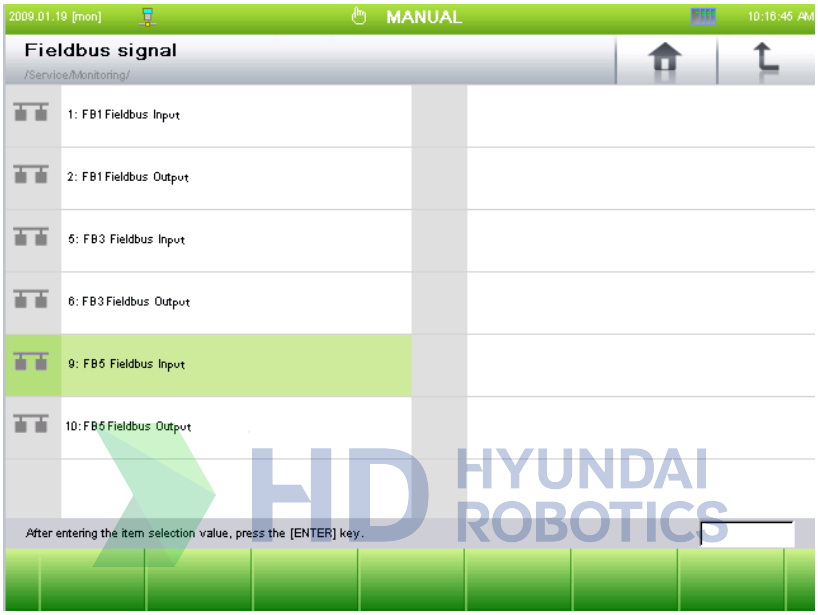


Figure 6.7 Embedded DeviceNet slave I/O monitoring menu

(3) The I/O of the embedded DeviceNet slave can be monitored.

Fieldbus In (FB5,X)

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	**58**	**59**	**60**	**61**	**62**	**63**	**64**
65	**66**	**67**	**68**	**69**	**70**	**71**	**72**
73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88
89	90	91	92	93	94	95	96

Figure 6.8 Embedded DeviceNet slave I/O monitoring screen

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