User Manual

DeviceNet Option Board

for SV-iP5A Series

Read this manual carefully before using the PROFIBUS-DP Option board and follow the instructions exactly.

After reading this manual, keep it at handy for future

LS Industrial Systems

Thank you for purchase of LS DeviceNet Option Board!

SAFETY PRECAUTIONS

- Always follow safety precautions to prevent accidents and potential hazards from occurring.
- Safety precautions are classified into “WARNING” and “CAUTION” in this manual.

⚠ **WARNING**	**Indicates a potentially hazardous situation which, if not avoided, can result in serious injury**
⚠ **CAUTION**	**Indicates a potentially hazardous situation which, if not avoided, can result in minor to moderate injury, or serious damage to the product.**

- Throughout this manual we use the following two illustrations to make you aware of safety considerations:

Identifies potential hazards under certain conditions.
Read the message and follow the instructions carefully.

Identifies shock hazards under certain conditions.
Particular attention should be directed because dangerous voltage may be present.

- Keep this manual at handy for quick reference.

⚠ CAUTION

- **Be sure to take ESD (Electrostatic Discharge) protection measures when you touch the board.**
  Otherwise, the option board may get damaged due to static charges.
- **Implement wiring change on the Option Board after checking that the power supply is off.**

Otherwise, there is a danger of connecting error and damage to the board.

- **Be sure to fix inverter to option board tightly.**
  Otherwise, there is a danger of connecting error and damage to the board.
- **Be sure to install a termination resistor (120ohm, 1/4W) at the end of the network.**
- **Be sure to check parameter unit when setting parameters.**
  Otherwise, there is a danger of connecting error.

CHAPTER 1 - INTRODUCTION

By using a DeviceNet communication board, SV-iP5A inverter can be connected to a DeviceNet network.

1.1. Through LS DeviceNet Option Board…

- Inverter can be controlled and monitored by PLC sequence program or any Master Module.
- Multiple inverters can be connected to one communication cable with simple and easy installation, dramatically saving wiring, maintenance cost and time.
- Compatible with PC System, PLC and any controllers is available, making Factory Automation more easily.

1.1.1. Vocabulary

In this manual we refer to the:

- DeviceNet Option Board for iP5A series as **the Option Board**
- iP5A series inverter as **the inverter**

1.2. Kit Contents

The DeviceNet option board kit consists of:

- DeviceNet Option Board, **1** pcs
- 5 pin Connector, **1** pcs
- Mounting poles, **3** pcs
- Installation Manual

1.3. DeviceNet Option Board Specification

- Device Type: AC Drives
- Explicit Peer to Peer Messaging: Support
- I/O Peer to Peer Messaging: N/A (Not Available)
- Configuration Consistency Value: N/A
- Faulted Node Recovery (Off-Line): Support

- Baud Rate Support: 125, 250, 500 (kbps)
- Master/Scanner (Predefined M/S Connection): Support
- I/O Slave Messaging
  - Polling: Support
  - Bit Strobe, Cyclic, COS (Change of State): N/A
- Range of Input Voltages: 11 – 25V DC

1.4. Installing the Communication Card

1.4.1. Board Layout

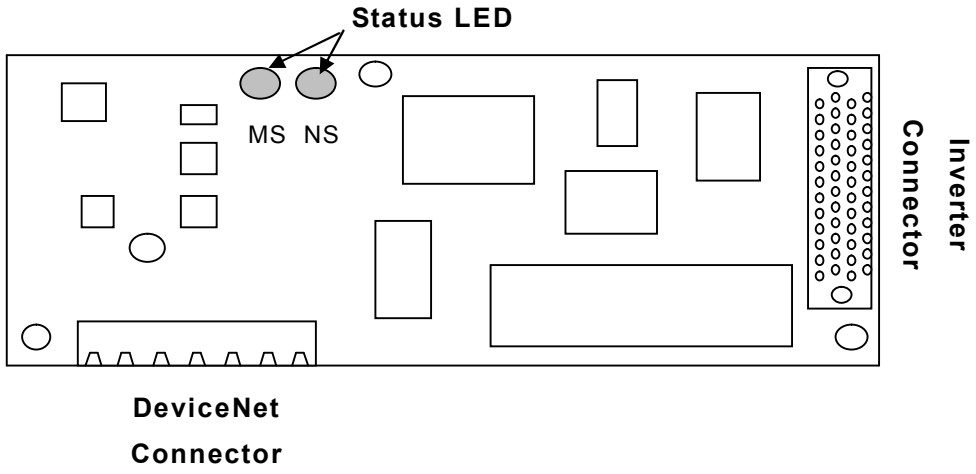


Figure 1 – Board layout

1.4.2. Status LED

MS (Module Status) LED	Checks the status of incoming power to option board, CPU function and communication to the Inverter.
NS (Network Status) LED	Checks the connection of option card on the Network and DeviceNet power status.

Note) Refer to **Chapter 4 - TROUBLESHOOTING** for more details.

1.4.3. DeviceNet Connection Terminal

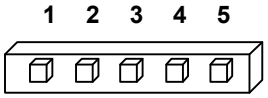
DeviceNet Terminal Block	Terminal	Signal	Function	Cable Color
	1	Common	Common	Black
	2	**CAN Low**	Signal Low	Blue
	3	**Shield**	Shield	Bare
	4	**CAN High**	Signal High	White
	5	**V+**	Power supply (11-24VDC)	Red

Figure 2 – DeviceNet Terminal Block

CHAPTER 2 - INSTALLING THE OPTION BOARD

2.1. Installing the Option Board to the Inverter

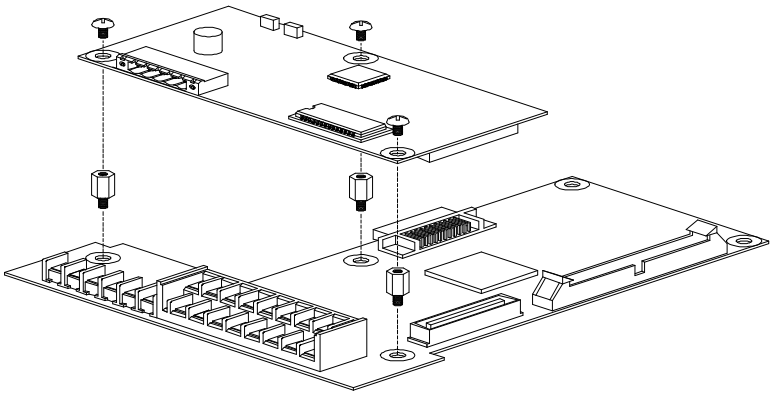


Figure 3 – Installing the DeviceNet Board to the Inverter

2.1.1. Setting the DeviceNet Parameter

2.1.1.1. Setting the MAC ID <COM Group, #10>

1. MAC ID (Media Access Control Identifier) is a unique value to identify nodes in the DeviceNet Network. When setting, you must ensure that the each serial device on the network has a unique address.
2. Setting and changing MAC ID is available via keypad.
3. The factory default setting is DeviceNet address 63. If DPRAM communication between Inverter and the Option card becomes faulty, the value will default to Station Number 63.

	Min Value	Max Value	Parameter Setting
MAC ID	0	63	COM Group, #10

4. When MAC ID is changed during Run, Option board is automatically reset to find the device new MAC ID is allocated on the network. If a duplicate Mac ID is checked, NS (Network Status) LED turns Solid Red. In this case, it should be changed to different MAC ID. In the normal operation, LED color is flashing Green.

2.1.1.2. Setting the Baud Rate < COM Group, #11>

Baud Rate	Trunk Cable Length		Drop Length	
	Thick Cable	Thin Cable	Max Length	Total
125 kbps	500 m (1640 ft.)	100 m (328 ft.)	6 m (20 ft.)	156 m (512 ft.)
250 kbps	250 m (820 ft.)			78 m (256 ft.)
500 kbps	100 m (328 ft.)			39m (128ft.)

Table 1 – Baud Rate vs. Cable Length

1. The Baud Rate determines the maximum length of the DeviceNet cable. Refer to Table 1 to determine cable lengths and baud rates. The above is only met when DeviceNet-dedicated cables are used. For more information on the DeviceNet cables, makers and detail specifications, refer to the Open DeviceNet Vendor Association (ODVA) homepage at "http://www.odva.org/".
2. NS LED remains OFF when the setting of actual Network communication speed and Baud Rate does not match.
3. Set the desirable Baud Rate via Keypad. Changing this parameter does not change the actual data rate until power is cycled. Reset the inverter or request Reset

Service to the Inverter Reset Identity Object.

4. NS LED will turn to flashing Green when Network Baud Rate matches Baud Rate of the option card and a unique MAC ID is allocated.

2.1.1.3. Setting Assembly Instance

Assembly Instance has four types of Sending/Receiving data through Poll I/O communication. Refer to **Assembly Object** in **Chapter 7** for detailed information.

2.2. Setting Other Parameters

2.2.1. Setting Option Mode [COM Group, #02]

Via DeviceNet	COM Group, #02 setting
Issuing Operating command only	Command
Issuing Frequency command only	Freq
Issuing Operating + Frequency command	Cmd+Freq

Table 2 – Setting Option Mode

Note) This setting supercedes setting in FU1 group.

2.2.2. Setting TimeOut [I/O, #49]

The factory default setting for TimeOut is 1 sec. When communication between inverter and DeviceNet network is disrupted in the Run mode, inverter checks the communication failure and performs operation under the setting in I/O group #48 until Master-setting Time + preset TimeOut elapses.

2.3. Poll I/O Connection

It is a Data transaction between Inverter and Scanner.

- Input/output size: 4 bytes
- Communication Rate: 0 (default)
- Data Transaction: Poll I/O

Data transaction thru Poll I/O is determined by the setting of Assembly Instance [COM, #12,13].
Assembly Instance consists of Input and Output, based on Scanner side. Therefore, Input Data means data Scanner receives. For inverter side, it is the feedback value to Scanner.
By contrast, Output Data is the data Scanner transmits to the Inverter as a new command.

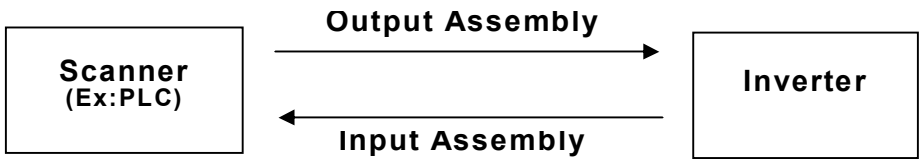


Figure 4 - Data Transaction via Poll I/O Communication

	Scanner Side	Inverter Side
Input Assembly Data	Receive data	Transmit data
Output Assembly Data	Transmit data	Receive data

CHAPTER 3 - MODES OF OPERATION

3.1. PowerUp Reset mode

During a powerup or reset, the option board:

1. Performs powerup initialization. First Module Status LED flashes Green for 0.25sec to Red for 0.25sec and then turns to Solid Green when DPRAM is in normal operation.
2. Then, Network Status LED flashes Green for 0.25sec to Red for 0.25sec
3. After no duplicate MAC ID is detected, Network Status LED flashes Green, indicating the option board is successfully connected to the Network. However, communication with other nodes has not been initiated.

If the above steps is failed, follow the below steps. No action is required in the normal operating state.

1. When DPRAM is not working properly, Module Status LED turns Solid Red. In this case, Check the option board's connection with Inverter first and cycle the power.
2. When NS remains OFF, not flashing Green,
   1) Check the DeviceNet Power
   2) Check the Baud Rate of Network and the Option board matches.

- When duplicate MAC ID error occurs, Network Status LED turns Solid Red. In this case, allocate the different MAC ID via Keypad.
- When the option board is in communication with other nodes, NS (Network Status) LED turns Solid Green.

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3.2. When EMC (Explicit Message Connection) is established by Scanner

- Network Status LED turns green. During this state, if EMC setting is deactivated, the LED will turn green after 10 seconds delay. Once EMC is connected, I/O Connection setting is available. At this time, the Network Status LED will not change.
- If I/O Connection is not established within given time, then Time Out will occur and Network Status LED turns flashing Red. (Depending on the time setting of EMC, the status can be changed to green again.)

CHAPTER 4 - TROUBLESHOOTING

The current status of Device and Network can be monitored through built-in LED (MS, NS).

[**NS** (Network Status) **LED**]

LED	Status	Cause	Diagnostics
OFF	Off-Line (No Power)	The option card is not receiving power from the Network.	Check DeviceNet power and cable connections and the power connection on the DeviceNet terminal block.
		Single node on the network	Check DeviceNet Master node operation for correct Communication.
		Incorrect Baud Rate is set.	Change the baud rate setting and reset the inverter.
Flashing Green	On-Line, Not Connected	Communication is set after duplicate node check is finished, but connection to other node is not completed.	Normal operating status before user makes connection.
Solid Green	On-Line, Connected (Link OK)	More than one EMC connection is established.	Polled I/O connection is available.
Flashing Red	Connection Time-Out Critical Link Failure.	Polled I/O connection is Timed Out	Inverter Reset. Request Reset Service to the Inverter Reset Identity Object. Retry I/O connection.
Solid Red	Faults occurred	Duplicate MAC ID check failed	Change the setting of MAC ID.
		Bus Off State	Check for line connection
Green→ Flashing Red	Self- diagnostic	Device is under self-diagnostic mode.	Wait for a moment.
Red → Flashing Green	Communication Fault	State of Communication Fault due to the failure to pass the Network Access. Identity communication Fault Request is accepted	No action required.

[**MS** (Module Status) **LED**]

LED	Status	Cause	Diagnostics
Off	No Power	5V Power is not applied to the option card.	Check the incoming power to inverter is provided. Check 5V power is ON.
Solid Green	Operational	Normal operation state	
Solid Red	Unrecoverable Fault	Data transaction through DPRAM is disrupted..	Check the connection between option card and Inverter.
Flashing Green & Red	Self Test	Device is in self-test mode.	

1. EDS(Electronic Data Sheet)

EDS files are specially formatted ASCII files that provide all of the information necessary for a configuration tool such as the DeviceNet Manager, to access and alter the parameters of a device. The EDS file contains information on the number of parameters in a device and how those parameters are grouped together. Information about each parameter is contained in this file such as parameter min, max, and default values, parameter data format and scaling and the parameter name and units.

Install EDS files for iP5A to control iP5A parameters using DeviceNet Manager program. This file can be downloaded from : http://www.lsis.biz or contact your LS representative.

CHAPTER 5 - DEVICENET DATA TABLES

- **Message**
  - R: Read Only
  - R/W: Read / Write enable

<Device Profile>

- AC/DC Drives: 0x 02

<Object Model>

Object Class Name	Class Code
Identity Object	0x01
Message Router	0x02
DeviceNet	0x03
Assembly	0x04
Connection	0x05
Motor Data	0x28
Control Supervisor	0x29
AC/DC Drive	0x2A
Inverter	0x64

< Identity Object>

Class Code	0x01
Instance	1 (All attributes are instance 1)

Attribute ID	Attribute Name	Access Method
1	Vendor ID	R
2	Device Type	R
3	Product Code	R
4	Revision	R
	Major Revision (High Byte)	
	Minor Revision (Low Byte)	

Attribute ID	Attribute Name	Access Method
5	Status [1]	R
6	Serial Number	R
7	Product Name	R

Service Name	Service Code	Implemented for:	
		Class	Instance
Get_Attribute_Single	0x0E	No	Yes
Reset	0x05	No	Yes
Set_Attribute_Single	0x10	No	Yes

[1] Status Attribute

Bit number	0 (Owned)	8 (Recoverable Minor Fault)	Other Bits
Meaning	Connected to the master	DPRAM Error	Not support

< DeviceNet Object >

Class Code	0x03
Instance	1 (All attributes are instance 1)

Attribute ID	Attribute Name	Access Method
1	MAC ID [2]	R/W
2	Baud Rate [3]	R/W
3	BOI	Not support
4	Bus-Off Counter	Not support
5	Allocation Information: Allocation Choice Byte [4] Master's MAC ID	R
6	MAC ID Switch Changed	R
7	Baud Rate Changed	Not support
8	MAC ID Switch Value	Not support
9	Baud Rate Switch Value	Not support

Service Name	Service Code	Implemented for:	
		Class	Instance
Get_Attribute_Single	0x0E	Yes	Yes
Set_Attribute_Single	0x10	No	Yes
Allocate Master/Slave Connection Set	0x4B	No	Yes
Release Group2	0x4C	No	Yes

[2] Range of Mac ID: 0 to 63

[3] Baud Rate

Value	0	1	2
Baud Rate	125 kbps	250 kbps	500 kbps

[4] Allocation Choice Byte

7	6	5	4	3	2	1	0
Not Supported						Polled	Explicit Message

Identifier Set			

< Assembly Object >

Class Code	0x04
Instance	1 (All attributes are instance 1)

Service Name	Service Code	Implemented for:	
		Class	Instance
Get_Attribute_Single	0x0E	No	Yes
Set_Attribute_Single	0x10	No	Yes

< Output Assembly Data Attribute Format >

Instance	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
20 (100)	0						Fault Reset		Run Fwd
	1								
	2	Speed Reference (Low Byte) – RPM unit (Speed Reference (Low Byte) – Hz unit)							
	3	Speed Reference (High Byte) – RPM unit (Speed Reference (High Byte) – Hz unit)							
21 (101)	0		NetRef	NetCtrl			Fault Reset	Run Rev	Run Fwd
	1								
	2	Speed Reference (Low Byte) – RPM unit (Speed Reference (Low Byte) – Hz unit)							
	3	Speed Reference (High Byte) – RPM unit (Speed Reference (High Byte) – Hz unit)							

Name	Description	Related Attribute	
		Class	Attr. ID
Run Fwd	Forward Run Command	0x29	3
Run Rev	Reverse Run Command	0x29	4
Fault reset	Fault Reset Command	0x29	12
NetRef [5]	Not used	0x2A	4
NetCtrl [6]	Not used	0x29	5
Speed Reference	Speed Command	0x2A	8

[5, 6] Setting Reference Control and Run/Strop Control can Only be done via LCD Keypad. Therefore, NetRef, NetCtrl in Instance 21 and 101 is not available.

< Input Assembly Data Attribute Format >

Instance	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
70 (110)	0						Run-ning1		Faulted
	1								
	2	Speed Reference (Low Byte) – RPM unit (Speed Reference (Low Byte) – Hz unit)							
	3	Speed Reference (High Byte) – RPM unit (Speed Reference (High Byte) – Hz unit)							
71 (111)	0	At Ref.	Ref from Net	Ctrl from Net	Ready	Run-ning 2, (Rev)	Run-ning 1, (Fwd)	Warn-ing	Faulted
	1								
	2	Speed Reference (Low Byte) – RPM unit (Speed Reference (Low Byte) – Hz unit)							
	3	Speed Reference (High Byte) – RPM unit (Speed Reference (High Byte) – Hz unit)							

Name	Description	Related Attribute	
		Class	Attr. ID
Faulted	DPRAM or Inverter Error	0x29	10
Warning	Not Supported	0x29	11
Running1	Motor is running Forward	0x29	7
Running2	Motor is running Reverse	0x29	8
Ready	Motor is ready to run	0x29	9
Ctrl From Net	Run/Stop control	0x29	15
Ref From Net	Speed control	0x2A	29
At Reference	Reach at Reference Speed	0x2A	3
Drive State	Current Motor State	0x29	6
Speed Actual	Speed Command	0x2A	7

< Connection Object >

Class Code	0x05	
Instance	1	Predefined EMC
	2	Poll I/O
	6, 7, 8, 9, 10	Dynamic EMC

Attribute ID	Attribute Name	Access Method	
		I/O	EMC
		Established/ Timed Out	Established/ Deferred delete
1	State	R	R
2	Instance_type	R	R
3	TransportClass_trigger	R	R
4	Produced_connection_id	R/W	R
5	Consumed_connection_id	R/W	R
6	initial_comm_characteristics	R	R
7	Produced_connection_size	R	R
8	Consumed_connection_size	R	R
9	Expected_packet_rate	R/W	R/W
10 – 11	N/A		
12	Watchdog_timeout_action	R/W	R/W
13	Produced_connection_path_ length	R	R
14	Produced_connection_path	R	R
15	Consumed_connection_path_ length	R	R
16	Consumed_connection_path	R	R
17	Production_inhibit_time	R/W	R

Service Name	Service Code	Implemented for:	
		Class	Instance
Get_Attribute_Single	0x0E	No	Yes
Reset	0x05	No	Yes
Set_Attribute_Single	0x10	No	Yes

< Motor Data Object >

Class Code	0x28
Instance	1 (All attributes are instance 1)

Attribute ID	Attribute Name	Access Method
3	MotorType	R [7]
6	RatedCurrent	R/W
7	RatedVoltage	R

[7] MotorType Attribute Squirrel Cage Induction Motor: #7

Service Name	Service Code	Implemented for:	
		Class	Instance
Get_Attribute_Single	0x0E	No	Yes
Set_Attribute_Single	0x10	No	Yes

< Control Supervisor Object >

Class Code	0x29
Instance	1 (All attributes are instance 1)

Attribute ID	Attribute Name	Access Method
3	Run 1 (Forward command)	R/W
4	Run 2 (Reverse command)	R/W
5	NetCtrl [8]	R
6	State	R
7	Running1 (Forward running)	R
8	Running2 (Reverse running)	R
9	Ready	R
10	Faulted	R
12	FaultRst	R/W
13	FaultCode	R
15	CtrlFromNet	R

[8] NetCtrl Attribute: This Attribute setting determines the control location for the motor. This value only can be set through the keypad for the safety reason. Changing this via DeviceNet does not cause error and cannot affect the setting

Service Name	Service Code	Implemented for:	
		Class	Instance
Get_Attribute_Single	0x0E	No	Yes
Set_Attribute_Single	0x10	No	Yes

< AC/DC Drive Object >

Class Code	0x2A
Instance	1 (All attributes are instance 1)

Attribute ID	Attribute Name	Access Method
3	AtReference	R
4	NetRef[9]	R/W
6	DriveMode	R/W
7	SpeedActual	R
8	SpeedRef	R/W
9	CurrentActual	R
29	RefFromNet	R
100	Actual Hz	R
101	Reference Hz	R/W
102	Acc. Time	R/W
103	Dec. Time	R/W

[9] NetRef Attribute
This setting is only done via Keypad for safety reason. Changing this via DeviceNet does not cause error and cannot affect the setting.

Service Name	Service Code	Implemented for:	
		Class	Instance
Get_Attribute_Single	0x0E	No	Yes
Set_Attribute_Single	0x10	No	Yes

< Inverter Object >

Class Code	0x64		Attribute Number
Instance	1	DRV Group	iP5A Parameter code # + 1
	2	FU1/FU2 Group	Same as iP5A Parameter code #
	3	I/O Group	Same as iP5A Parameter code #
	4	COM Group	Same as iP5A Parameter code #
	5	APP Group	Same as iP5A Parameter code #

Note) Refer to iP5A inverter manual for reference of Attribute Number. It is the same as iP5A Parameter Code Number.

Service Name	Service Code	Implemented for:	
		Class	Instance
Get_Attribute_Single	0x0E	Yes	Yes
Set_Attribute_Single	0x10	No	Yes

CHAPTER 6 - PARAMETER CODE (HEX)

<iP5A 공통영역>[10]

Parameter Address	Parameter Name	Unit	Read/ Write	Data Value (Hex)			
0x0000	Inverter model	-	R	9: SV-iP5A			
0x0001	Inverter capacity	-	R	SV-iP5A 4:5.5 5:7.5 6:11 7:15 8:18.5 9:22 A:30 B:37 C:45 D:55 E:75 F:90 10:110 11:132 12:160 13:220 14:280 15:315 16:375 17:450 (Unit : kW)			
0x0002	Inverter Input Voltage	-	R	0: 220V Class 1: 440V Class			
0x0003	S/W Version	-	R	Ex) 0x0100:Ver1.00, 0x0110:Ver1.10			
0x0005	Frequency Reference	0.01Hz	R/W				
0x0006	Run Command	-	R/W	Bit00	Stop		
				Bit01	Forward run (FX)		
				Bit02	Reverse run (RX)		
				Bit03	Fault reset(0→1)		
				Bit04	Emergency stop		
				Bit05	Not used		
			R	Bit06	Run/Stop command source	0	Terminal
						1	Loader
				Bit07		2	Option
						3	Int. 485
				Bit08	Frequency reference	0~16	Multi-step speed freq. (0, 2~16)
						17~19	UpDown (Up,Down, UDZero)
				Bit09		20~21	Not used
						22~25	Analog (V1,V1S,I,V1I)
				Bit10		26	Pulse
						27	Sub
				Bit11		28	Int. 485
						29	Option
				Bit12		30	JOG
						31	PID
				Bit13	Not used		
				Bit14	Not used		
				Bit15	Set when Network error		

Parameter Address	Parameter Name	Unit	Read/ Write	Data Value (Hex)	
0x0007	Acceleration Time	0.1 sec	R/W		
0x0008	Deceleration Time	0.1 sec	R/W		
0x0009	Output Current	0.1 A	R		
0x000A	Output Frequency	0.01 Hz	R		
0x000B	Output Voltage	0.1 V	R		
0x000C	DC Link voltage	0.1 V	R		
0x000D	Output power	0.1 kW	R		
0x000E	Operating status of Inverter	-	R	Bit00	Stop
				Bit01	Forward running (FX)
				Bit02	Reverse running (RX)
				Bit03	Fault (Trip)
				Bit04	Accelerating
				Bit05	Decelerating
				Bit06	Speed arrival
				Bit07	Forward run command
				Bit08	DC Braking
				Bit09	Not used
				Bit10	Brake Open
				Bit11	Forward run command
				Bit12	Reverse run command
				Bit13	REM.R/S(Int. 485,OPT)
				Bit14	REM.Freq.(Int. 485,OPT)
				Bit15	Not used
0x000F	Trip information	-	R	Bit00	OCT1
				Bit01	OV
				Bit02	EXT-A
				Bit03	BX
				Bit04	LV
				Bit05	Not used
				Bit06	GF (Ground Fault)
				Bit07	OH (Inverter overheat)

Parameter Address	Parameter Name	Unit	Read/ Write	Data Value (Hex)	
				Bit08	ETH (Motor overheat)
				Bit09	OLT (Overload trip)
				Bit10	HW-Diag
				Bit11	Not used
				Bit12	OCT2
				Bit13	OPT (Option error)
				Bit14	PO (Phase Open)
				Bit15	IOLT
0x0010	Input terminal status	-	R	Bit00	M1
				Bit01	M2
				Bit02	M3
				Bit03	M4
				Bit04	M5
				Bit05	M6
				Bit06	M7
				Bit07	M8
				Bit08	P4
				Bit09	P5
				Bit10	P6
				Bit11~15	Not used
0x0011	Output terminal status	-	R	Bit00	AUX1
				Bit01	AUX2
				Bit02	AUX3
				Bit03	AUX4
				Bit04	Q1 (OC1)
				Bit05	Q2 (OC2)
				Bit06	Q3 (OC3)
				Bit07	30AC
				Bit8~15	Not used
0x0012	V1	-	R	0 ~ FFC0	
0x0013	V2	-	R	0 ~ FFC0	
0x0014	I	-	R	0 ~ FFC0	

Parameter Address	Parameter Name	Unit	Read/ Write	Data Value (Hex)	
0x0015	RPM	-	R		
0x001A	Unit display	-	R	0: Hz, 1: RPM	
0x001B	Pole number	-	R		
0x001C	Custom Version	-	R		

[10] When you modify data through the common parameters, the data is not saved. The modified data is applied only at the present time, but the data will revert to the previous value in case of the inverter's reset or its power Off/On again. When you modify data through the group parameters except the common, the modified value is applied even if the inverter's reset of its power Off/On.

6.1 COM Group Parameters (Parameter's addresses are hexadecimal)

CODE COM	Comm. Add	Description	LCDKeypad Display	Setting Range	Factory Default	Adj. During Run
00	9600	Jump to Desired Code #	Jump code	1 – 67	1	○
01	9601	Type of the option board	Opt B/D	DeviceNet	*	*
02	9602	Option mode	Opt mode	None Command Freq Cmd + Freq	None	X
03	9603	Option version	Opt Version	Ver X.X	Ver X.X	*
10	960A	DeviceNet ID	MAC ID	0 – 63	63	○
11	960B	DeviceNet communication speed	Baud Rate	(125 kbps) (250 kbps) (500 kbps)	125 kbps	○
12	960C	DeviceNet output instance	Out Instance	(20) (21) (100) (101)	20	○
13	960D	DeviceNet input instance	In Instance	(70) (71) (110) (111)	70	○
67	9643	Update option parameters of communication	Comm UpDate	No Yes	No	X

- COM-01 [Opt B/D]

Indicates Option boards installed. This value is automatically set when the boards are installed.

- COM-02 [Opt Mode]

Determines whether Run/Stop/Reference Frequency is set via Communication.

Value	Display	Description
0	None	Disabled
1	Command	Run/Stop setting via Communication
2	Freq	Frequency setting via Communication
3	Cmd + Freq	Run/Stop/Reference Frequency via Communication

- COM-03 [Opt Version]
  Displays version of Option Board.

- COM-10 [MAC ID]
  Set up a MAC ID of DeviceNet. MAC ID should be a unique value in the network. If a MAC ID has a duplicate value in the network, NS (Network Status) LED is turned on red to display the status.

- COM-11 [Baud Rate]
  Set up the communication speed of the DeviceNet. Communication speeds should be same in one network.

- COM-12,13 [Out Instance, In Instance]
  This is the parameter that is used in the Assembly Object of the DeviceNet.
  (Assembly Object: It is the object to monitor an inverter's output frequency and run status (In Instance) when an inverter's run command and a frequency command (Out Instance) are entered.)

- COM-67 [Comm UpDate]
  It is used to update the communication parameters which have been changed. It is the parameter only for the iP5A.

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