User Manual

PROFIBUS-DP
Option Board for
SV-iS5 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 reference.**

LG Industrial Systems

Thank you for purchase of LG Profibus-DP Option Board!

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SAFETY PRECAUTIONS

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- 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 or death.

⚠ **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.
  Read the message and follow the instructions carefully.

⚡ Identifies shock hazards.
  Particular attention should be directed because dangerous voltage may be present.

- Keep this manual at handy for quick reference.

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⚠

CAUTION

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- **Do not touch the CMOS components unless the board is grounded.**

  ESD can cause break down of CMOS components.

- **Do not change the communication cable with the inverter power is turned on.**

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

- **Make sure to precisely insert the connector of inverter and option board**

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

● **Check the parameter unit when setting the parameters.**

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

● **Connect terminal resistor (390ohm, 220ohm, 390ohm) at the last connected option board.**

1. INTRODUCTION

By using a Profibus Option board, SV-iS5 inverter can be connected to a Profibus network.

1.1. When you use the Profibus Option Board …

- Inverter can be controlled and monitored by the sequence program of the PLC or other master module.
- With a single communication line, multi-units of inverters can be operated simultaneously with each other, reducing the installation cost compared to that case of non-communication system set up. Also, simple wire installation can cut down installation and maintenance labor hours.
- Able to use PLCs to control the drive and can be integrated with PC to simplify the Total Factory Automation.

1.2. Kit Contents

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

1.3. Profibus Option Board Specification

- Device Type : Profibus DP Slave
- Auto Baud Rate Detect : Supported
- Sync Mode : Supported
- Freeze Mode : Supported
- Max Input Length : 8 words
- Max Output Length : 8 words
- Max Data Length : 16 words
- Baud Rate Support : 9.6K, 19.2K, 93.75K, 187.5K, 500K, 1.5M, 3M, 6M, 12M
- Modular Station : Supported
- Max Module : 2
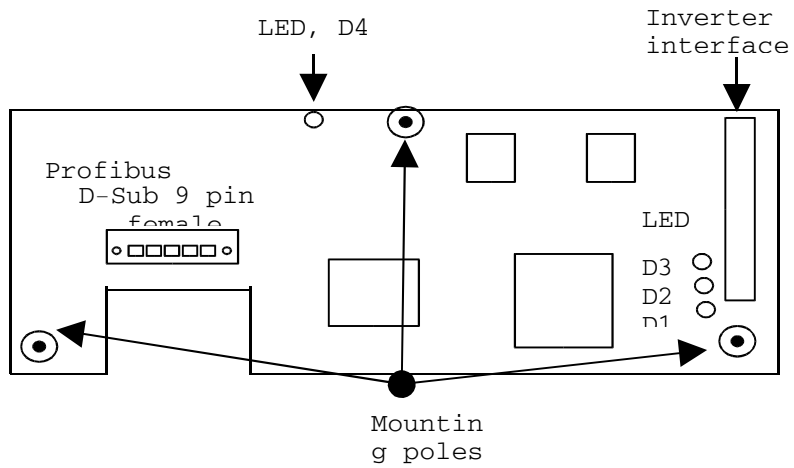
2.   LAYOUT AND INSTALLATION

2.1.   Layout

LED, D4

Inverter
interface

Profibus
   D-Sub 9 pin
      female

LED

D3
D2
D1

Mountin
g poles

Figure 1. Layout

2.1.1.   Status LED

Interface LED (with drive) (D1)	Active when the communication between drive and Profibus Option Board is operating correctly.
Heart beat LED (D2)	Active when Profibus Option Board self-diagnostic without any fault.
Error LED (D3)	Active when Option Board has fault
Profibus communication status LED (D4)	Active when status of Profibus is operating correctly.

* Please refer to "5. Troubleshooting" for further detail.

2.1.2.   Communication Terminal

Pin No.	Signal	Description
1	Shield	Protective Ground
2	M24	24V Output GND
3	RxD/TxD-P	Receive/Transmit Data Plus
4	CTRL-P	Control signal for repeater
5	DGND	Signal GND
6	VP	5V for terminate resistor
7	P24	24V Output +
8	RxD/TxD-N	Rxd/Txd data Negative
9	CTRL-N	Control signal for repeater

Note) Only 3,5,6,8 signal supported.

2.2.   Installation

2.2.1.   Installing   Profibus   board   on   Inverter   board
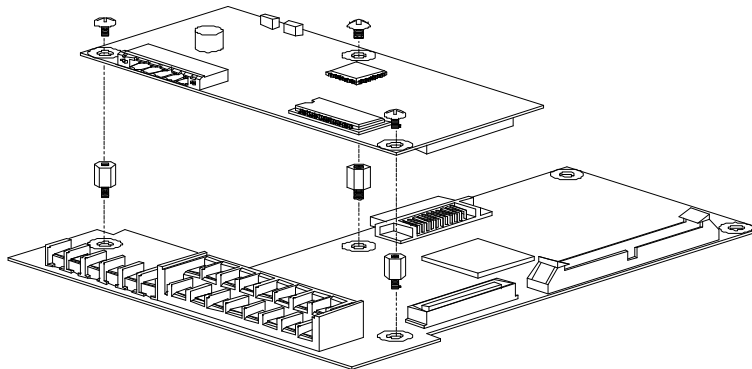
Figure 2. Installing option board on Inverter board

2.2.2.   Profibus Parameter Setting

2.2.2.1   Station Address Setting

1. Station Address is an unique No. for distinguishing the each node in Profibus Network.
2. Station Address settable by Keypad.
3. Default value is "1". If any trouble in DPRAM communication between inverter control board and option card, default value must be 127.

	Minimum	Maximum	Parameter Location
Profi MAC ID	1	127	COM Group, # 20

2.2.2.2   Setting the Number of output Data

1. Setting the number of monitoring data

	Minimum	Maximum	Parameter Location
OutPut Num	1	8	COM Group, # 30

2.2.2.3   Setting the number of input data

1. Setting the number of external command data

	Minimum	Maximum	Parameter Location
InPut Num	1	8	COM Group, # 40

2.2.2.4   Setting the addresses of output data

1. Setting the addresses as many as the number of output data.

	Minimum	Maximum	Parameter Location
OutPut 0~7	0000	57FF(HEX)	COM Group, # 31~38

2.2.2.5　Setting the addresses of input data

1. Setting the addresses as as many as the number of input data.

	Minimum	Maximum	Parameter Location
InPut 0~7	0000	57FF(HEX)	COM Group, # 41~48

3.　I/O DATA TRANSMIT/RECEIVE

 Output data set by Keypad is transmitted to Profibus Master Module (PLC or PC) through Profibus Option Board. On the contrary, input data is received from Profibus Master Module(PLC or PC) through Profibus Option Board.

4.　OPERATION

4.1.　When power-up or reset.

- After self-testing, Heart beat LED(D2) blinks when no fault occurs . If any fault is detected, Heart beat LED(D2) is off or Error LED(D3) is turned on.
- After trying to get correct configuration parameter (Station Address, Out data No, In Data No, Out Data Address1~8, In Data Address1~8 set by Keypad) by DPRAM with drive, configure profibus and start the communication. Interface LED(D1) blinks whenever communicating to drive.
- Profibus communication status LED(D4) is deactivated when communication with Master starts as correct configuration.

5.　TROUBLE SHOOTING

4 LEDs (Profibus communication status LED, Interface LED with drive, Heart beat LED, Error LED) indicate the status of device and network.

\<Profibus communication status LED (D4) >

LED	Status	Cause	Help
Off	Off-Line	Misconnection with connector	● Check pin number of connector and connection of terminate resistor
		There is no MASTER in this network	● Check master status or master existence
		Wrong address	● Check the address in Keypad is equal to that of LG Profibus Option Board using Configuration Tool, and unique number in network.
		Network Configuration problem	● Check the maximum length of segment. ● Check the numbers of node include repeater in segment. Number of node must be 32 or above in segment. ● Check the numbers of node include repeater in Network. Number of node must be 126 or above in network.
On	On-Line	Parameterization Fault	● Parameter of master node is not equal to that of product. Check the LG Profibus option board is correctly selected using configuration tool.
		Configuration Fault	● Configuration of master node is not equal to product.
		Network, address, Parameterization, Configuration is operating correctly.	

< Interface with drive LED >

LED	Status	Cause	Help
Blink about 1 sec period	DPRAM Interface error	Interface between drive and DPRAM is not avaible.	● Check the power of drive. ● Check the fault status of drive. ● Check the connector to drive
On	Normal	Operating correctly	

< **Heart Beat LED** >

LED	Status	Cause	Help
Off	Option Board error	Operating of option Board is not available	● Check the power of drive. ● Check the fault status of drive. ● Check the connector to drive
Blink about 1 sec period	DPRAM Interface error	Interface between drive and DPRAM is not avaible.	● Check the power of drive. ● Check the fault status of drive. ● Check the connector to drive
On	Normal	Operating correctly	

< **Error LED** >

LED	Status	Cause	Help
On	Option Board error	Operating of option Board is not available.	● Check the fault status of drive. ● Check the connector to drive.
Off	Normal	Operating correctly	

6. GSD FILE (ELECTRONIC DATA SHEETS)

This is a file that contains drive parameter data. In order to control the parameter of SV-iS5, the GSD file for iS5 drive must be installed (GSD file is downloadable at LGIS Homepage www.lgis.com.

7. PARAMETER CODE (HEX)

<Common> : Area accessible regardless of inverter models

Parameter Address	Parameter Name	Unit	Read/Write	Data Value (Hex)
0x0000	Drive model	-	R	4: SV-iS5
0x0001	Drive capacity	-	R	0: 0.75 1:1.5 2:2.2 3: 3.7 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: 200 14:220 15:280 16:375 (Unit : kW)
0x0002	Drive Input Voltage	-	R	0: 220V 1: 440V
0x0003	S/W Version	-	R	0100: Ver. 1.00, 0101: Ver 1.01
0x0005	Frequency Reference	0.01Hz	R/W	

Parameter Address	Parameter Name	Unit	Read/Write	Data Value (Hex)
0x0006	Run Command	-	R/W	Bit 0: Stop Bit 1: Forward Run Bit 2: Reverse Run Bit 3: Fault Reset Bit 4: Emergency Stop
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	

Parameter Address	Parameter Name	Unit	Read/Write	Data Value (Hex)
0x000E	Sequence Monitor	-	R	BIT 0 : Stop BIT 1 : Forward Run BIT 2 : Reverse Run BIT 3 : Fault (Trip) BIT 4 : Accelerating BIT 5 : Decelerating BIT 6 : Output Frequency Arrival BIT 7 : DC Braking BIT 8 : Stopping BIT 9 :Not Available BIT 10 : BrakeOpen BIT11: Forward Run Command BIT 12 : Reverse Run Command
0x000F	Trip information	-	R	Bit 0:OCT1, Bit 1: OV, Bit 2: EXT-A Bit 3: BX, Bit 4:OCT2, Bit 5: GF, Bit 6: OH,Bit 7: ETH, Bit 8: OLT, Bit 9: HW-diag,Bit10:EXT-B,Bit11:FO Bit12:OPT,Bit13:POBit,14:IOLT, Bit15:LV
0x0010	Input Terminal Status	-	R	Bit 0: P1, Bit 1: P2, Bit 2: P3 Bit 3: P4, Bit 4: P5, Bit 5: P6, Bit 6: RST, Bit 7: BX, Bit 8: JOG, Bit 9: FX, Bit 10: RX

Parameter Address	Parameter Name	Unit	Read/Write	Data Value (Hex)
0x0011	Output Terminal Status	-	R	Bit 0: Q1 (OC1) , Bit 1: Q2 (OC2) Bit 2: Q3 (OC3), Bit 3: AUX Bit 4: 30AC
0x0012	V1	-	R	0 – FFC0
0x0013	V2	-	R	0 – FFC0
0x0014	I	-	R	0 – FFC0
0x0015	RPM	-	R	

< DRV Group >

Address	NO.	Description	Default	Maximum	Minimum	Unit
5100	DRV#00	Cmd. freq	0	MaxFreq	0	0.01Hz
5101	DRV#01	Acc. Time	100	6000	0	0.1sec
5102	DRV#02	Dec. Time	200	6000	0	0.1sec
5103	DRV#03	Drive mode	1	2	0	
5104	DRV#04	Freq. mode	0	4	0	
5105	DRV#05	Step freq - 1	1000	MaxFreq	startFreq	0.01Hz
5106	DRV#06	Step freq - 2	2000	MaxFreq	startFreq	0.01Hz
5107	DRV#07	Step freq - 3	3000	MaxFreq	startFreq	0.01Hz
5108	DRV#08	Current	-	-	-	0.1A
5109	DRV#09	Speed	-	-	-	1rpm
510A	DRV#10	DC Link Voltage		-	-	V

< FU1 Group >

Address	NO.	Description	Default	Maximum	Minimum	Unit
5203	FU1 #03	Run prohibit	0	2	0	

Address	NO.	Description	Default	Maximum	Minimum	Unit
5205	FU1 #05	Acc. pattern	0	4	0	
5206	FU1 #06	Dec. pattern	0	4	0	
5207	FU1 #07	Stop mode	0	2	0	
5208	FU1 #08	DcBr freq.	500	6000	startFreq	0.01Hz
5209	FU1 #09	DcBlk time	10	6000	0	0.01sec
520A	FU1 #10	DcBr value	50	200	0	%
520B	FU1 #11	DcBr time	10	600	0	0.1sec
520C	FU1 #12	DcSt value	50	200	0	%
520D	FU1 #13	DcSt time	0	600	0	0.1sec
5214	FU1 #20	Max freq.	6000	40000	4000	0.01Hz
5215	FU1 #21	Base freq.	6000	maxFreq	3000	0.01Hz
5216	FU1 #22	Start freq.	50	6000	1	0.01Hz
5217	FU1 #23	Freq limit	0	1	0	
5218	FU1 #24	F-limit Lo.	50	highFreq	startFreq	0.01Hz
5219	FU1 #25	F-limit Hi.	6000	maxFreq	lowFreq	0.01Hz
521A	FU1 #26	Torque boost	0	1	0	

Address	NO.	Description	Default	Maximum	Minimum	Unit
521B	FU1 #27	Fwd boost	20	150	0	0.1%
521C	FU1 #28	Rev boost	20	150	0	0.1%
521D	FU1 #29	V/F pattern	0	2	0	
521E	FU1 #30	User freq. 1	1500	maxFreq	0	0.01Hz
521F	FU1 #31	User volt. 1	25	100	0	%
5220	FU1 #32	User freq. 2	3000	maxFreq	0	0.01Hz
5221	FU1 #33	User volt. 2	50	100	0	%
5222	FU1 #34	User freq. 3	4500	maxFreq	0	0.01Hz
5223	FU1 #35	User volt. 3	75	100	0	%
5224	FU1 #36	User freq. 4	6000	maxFreq	0	0.01Hz
5225	FU1 #37	User volt. 4	100	100	0	%
5226	FU1 #38	Volt control	1000	1100	400	0.1%
5227	FU1 #39	Energy save	0	30	0	%
5232	FU1 #50	ETH select	0	1	0	
5233	FU1 #51	ETH 1min	180	200	ETH Cont	%
5234	FU1 #52	ETH Cont	100	150	50	%

Address	NO.	Description	Default	Maximum	Minimum	Unit
5235	FU1 #53	Motor type	0	1	0	
5236	FU1 #54	OL level	150	150	30	%
5237	FU1 #55	OL time	100	300	0	0.1sec
5238	FU1 #56	OLT select	1	1	0	
5239	FU1 #57	OLT level	180	200	30	%
523A	FU1 #58	OLT time	600	600	0	0.1sec
523B	FU1 #59	Stall prev.	0	7	0	
523C	FU1 #60	Stall level	180	250	30	%

< **FU2 Group** >

Address	NO.	Description	Default	Maximum	Minimum	Unit
5307	FU2 #07	Dwell freq	500	maxFreq	StartFreq	0.01Hz
5308	FU1 #08	Dwell time	0	100	0	0.1sec
530A	FU2 #10	Jump freq	0	1	0	
530B	FU2 #11	jump lo 1	1000	jump Hi 1	StartFreq	0.01Hz
530C	FU2#12	jump Hi 1	1500	maxFreq	jump Lo 1	0.01Hz

Address	NO.	Description	Default	Maximum	Minimum	Unit
530D	FU2 #13	jump lo 2	2000	jump Hi 2	StartFreq	0.01Hz
530E	FU2 #14	jump Hi 2	2500	maxFreq	jump Lo 2	0.01Hz
530F	FU2 #15	jump lo 3	3000	jump Hi 3	startFreq	0.01Hz
5310	FU2 #16	jump Hi 3	3500	maxFreq	jump Lo 3	0.01Hz
5311	FU2 #17	Start Curve	40	100	1	%
5312	FU2 #18	End Curve	40	100	1	%
5313	FU2 #19	Trip select	0	3	0	BIT
5314	FU2 #20	Power-on run	0	1	0	
5315	FU2 #21	RST restart	0	1	0	
5316	FU2 #22	Speed Search	0	15	0	BIT
5317	FU2 #23	SS Sup-Curr	100	200	80	
5318	FU2 #24	SS P-gain	100	9999	0	
5319	FU2 #25	SS I-gain	1000	9999	0	
531A	FU2 #26	Retry number	0	10	0	
531B	FU2 #27	Retry delay	10	600	0	0.1sec
531E	FU2#30	Motor select	0	9	0	
531F	FU2#31	Pole number	4	12	2	

Address	NO.	Description	Default	Maximum	Minimum	Unit
5320	FU2 #32	Rated-Slip	(Note3)	1000	0	0.01Hz
5321	FU2 #33	Rated-Curr	(Note3)	2000	10	0.1A
5322	FU2 #34	Noload-Curr	(Note3)	2000	5	0.1A
5324	FU2 #36	Efficiency	(Note3)	100	70	%
5325	FU2 #37	Inertia rate	0	1	0	
5327	FU2 #39	Carrier freq	50	150	10	0.1kHZ
5328	FU2 #40	Control mode	0	2	0	
5329	FU2 #41	Auto tuning	0	1	0	
532A	FU2 #42	Rs (Note4)	(Note3)	5000	0	0.001ohm
532B	FU2 #43	Rr (Note5)	(Note3)	5000	0	0.001ohm
532C	FU2 #44	Lsigma (Note6)	(Note3)	MaxInduc	0	0.001mH
532D	FU2 #45	SL P-gain	32767	32767	0	
532E	FU2 #46	SL I-gain	3276	32767	0	
532F	FU2 #47	proc PI mode	0	1	0	
5330	FU2 #48	PID Ref	1	1	0	
5331	FU2 #49	PID Ref Mode	0	5	0	
5332	FU2 #50	PID Out Dir	1	1	0	

Address	NO.	Description	Default	Maximum	Minimum	Unit
5333	FU2 #51	PID F/B	0	2	0	
5334	FU2 #52	PID P-gain	3000	9999	0	0.1%
5335	FU2 #53	PID I-time	300	320	0	0.1sec
5336	FU2 #54	PID D-time	0	9999	0	0.1msec
5337	FU2 #55	PID +limit	6000	maxFreq	0	0.01Hz
5338	FU2 #56	PID -limit	6000	maxFreq	0	0.01Hz
5339	FU2 #57	PID Out Inv	0	1	0	
533A	FU2 #58	PID OutScale	1000	9999	1	0.1%
533B	FU2 #59	PID P2-gian	1000	9999	0	0.1%
533C	FU2 #60	P-gain Scale	1000	1000	0	0.1%
5345	FU2 #69	Acc/Dec ch F	0	maxFreq	0	0.01Hz
5346	FU2 #70	Acc/Dec freq	0	1	0	
5347	FU2 #71	Time scale	1	2	0	
5348	FU2 #72	PowerOn disp	0	12	0	
5349	FU2 #73	User disp	0	2	0	
534A	FU2 #74	RPM factor	100	1000	1	%
534B	FU2 #75	DB mode	1	2	0	
534C	FU2 #76	DB %ED	10	30	0	%

Address	NO.	Description	Default	Maximum	Minimum	Unit
5351	FU2 #81	2nd Acc time	50	6000	0	0.1sec
5352	FU2 #82	2nd Dec time	100	6000	0	0.1sec
5353	FU2 #83	2nd BaseFreq	6000	maxFreq	3000	0.01Hz
5354	FU2 #84	2nd V/F	0	2	0	
5355	FU2 #85	2nd F-boost	20	150	0	0.1%
5356	FU2 #86	2nd R-boost	20	150	0	0.1%
5357	FU2 #87	2nd Stall	150	150	30	%
5358	FU2 #88	2nd ETH 1min	150	200	2nd ETH Cont	%
5359	FU2 #89	2nd ETH Cont.	100	2nd ETH 1min	50	%
535A	FU2 #90	2nd R-Curr	36	2000	10	0.1A
535D	FU2 #93	Para. Init	0	8	0	

(Note 3,4,5,6) Value depends on motor capacity.

< I/O Group >

Address	NO.	Description	Default	Maximum	Minimum	Unit
5401	I/O #01	V1 filter	10	9999	0	ms

Address	NO.	Description	Default	Maximum	Minimum	Unit
5402	I/O #02	V1 volt x1	0	V1 vort x2	0	0.01V
5403	I/O #03	V1 freq y1	0	maxFreq	0	0.01Hz
5404	I/O #04	V1 volt x2	1000	1000	V1 volt x1	0.01V
5405	I/O #05	V1 freq y2	6000	maxFreq	0	0.01Hz
5406	I/O #06	I filter	10	9999	0	ms
5407	I/O #07	I curr x1	400	I curr x2	0	0.01mA
5408	I/O #08	I freq y1	0	maxFreq	0	0.01Hz
5409	I/O #09	I curr x2	2000	2000	I curr x1	0.01mA
540A	I/O #10	I freq y2	6000	maxFreq	0	0.01Hz
540B	I/O #11	Wire broken	0	2	0	
540C	I/O #12	P1 define	0	32	0	
540D	I/O #13	P2 define	1	32	0	
540E	I/O #14	P3 define	2	32	0	
5411	I/O #17	Ti Filt Num	15	50	2	
5414	I/O #20	Jog freq	1000	MaxFreq	startFreq	0.01Hz

Address	NO.	Description	Default	Maximum	Minimum	Unit
5415	I/O #21	Step freq - 4	4000	MaxFreq	startFreq	0.01Hz
5416	I/O #22	Step freq - 5	5000	MaxFreq	startFreq	0.01Hz
5417	I/O #23	Step freq - 6	4000	MaxFreq	startFreq	0.01Hz
5418	I/O #24	Step freq - 7	3000	MaxFreq	startFreq	0.01Hz
5419	I/O #25	Acc time– 1	200	6000	0	0.1sec
541A	I/O #26	Dec time – 1	200	6000	0	0.1sec
541B	I/O #27	Acc time – 2	300	6000	0	0.1sec
541C	I/O #28	Dec time – 2	300	6000	0	0.1sec
541D	I/O #29	Acc time – 3	400	6000	0	0.1sec
541E	I/O #30	Dec time - 3	400	6000	0	0.1sec
541F	I/O #31	Acc time – 4	500	6000	0	0.1sec
5420	I/O #32	Dec time – 4	500	6000	0	0.1sec
5421	I/O #33	Acc time – 5	400	6000	0	0.1sec
5422	I/O #34	Dec time – 5	400	6000	0	0.1sec
5423	I/O #35	Acc time – 6	300	6000	0	0.1sec
5424	I/O #36	Dec time – 6	300	6000	0	0.1sec

Address	NO.	Description	Default	Maximum	Minimum	Unit
5425	I/O #37	Acc time – 7	200	6000	0	0.1sec
5426	I/O #38	Dec time – 7	200	6000	0	0.1sec
5428	I/O #40	FM mode	0	3	0	
5429	I/O #41	FM adjust	100	200	10	%
542A	I/O #42	FDT freq	3000	maxFreq	0	0.01Hz
542B	I/O #43	FDT band	1000	maxFreq	0	0.01Hz
542C	I/O #44	Aux mode	12	23	0	
542D	I/O #45	Relay mode	2	7	0	BIT3
542E	I/O #46	Inv No.	1	31	1	
542F	I/O #47	Baud rate	3	4	0	
5430	I/O #48	Lost command	0	2	0	
5431	I/O #49	Time out	10	1200	1	0.1sec

<Note>

If you need to know specific parameter addresses for Auto Sequence Operation, please contact LG local distributors.

< EXT Group >

Address	NO.	Description	Default	Maximum	Minimum	Unit
5501	EXT #01	Sub B/D				
5502	EXT #02	P4 define	3	32	0	
5503	EXT #03	P5 define	4	32	0	
5504	EXT #04	P6 define	5	32	0	
5505	EXT #05	V2 mode	0	2	0	
5506	EXT #06	V2 filter	10	9999	0	msec
5507	EXT #07	V2 volt x1	0	V2 volt x2	0	0.01V
5508	EXT #08	V2 freq y1	0	maxFreq	0	0.01 Hz
5509	EXT #09	V2 volt x2	1000	1000	V2 volt x1	0.01V
550A	EXT #10	V2 freq y2	6000	maxFreq	0	0.01 Hz
550E	EXT #14	F mode	0	2	0	
550F	EXT #15	F pulse set	0	1	0	
5510	EXT #16	F pulse num	1024	4096	360	
5511	EXT #17	F filter	10	9999	0	msec
5512	EXT #18	F pulse x1	0	F pulse x2	0	0.1kHz

Address	NO.	Description	Default	Maximum	Minimum	Unit
5513	EXT #19	F freq y1	0	maxFreq	0	0.01 Hz
5514	EXT #20	F pulse x2	100	1000	F pulse x1	0.1kHz
5515	EXT #21	F freq y2	6000	maxFreq	0	0.01 Hz
5516	EXT #22	PG P-gain	3000	9999	0	
5517	EXT #23	PG I-gain	300	9999	0	
5518	EXT #24	PG Slip Freq	100	200	0	%
551E	EXT #30	Q1 define	0	23	0	
551F	EXT #31	Q2 define	1	23	0	
5520	EXT #32	Q3 define	2	23	0	
5522	EXT #34	LM mode	1	3	0	
5523	EXT #35	LM adjust	100	200	10	%
5528	EXT #40	AM1 mode	0	3	0	
5529	EXT #41	AM1 adjust	100	200	10	%
552A	EXT #42	AM2 mode	3	3	0	
552B	EXT #43	AM2 adjust	100	200	10	%

< COM Group >

Address	NO.	Description	Default	Maximum	Minimum	Unit
5601	COM #01	Opt B/D				
5602	COM #02	Opt mode	0	3	0	
5603	COM #03	Opt version	1.00			
5613	COM #20	Profi MAC ID	1	127	1	
561E	COM #30	Output Num	3	8	0	
561F	COM #31	Output 1	000A	0000	57FF	HEX
5620	COM #32	Output 2	000E	0000	57FF	HEX
5621	COM #33	Output 3	000F	0000	57FF	HEX
5622	COM #34	Output 4	0000	0000	57FF	HEX
5623	COM #35	Output 5	0000	0000	57FF	HEX
5624	COM #36	Output 6	0000	0000	57FF	HEX
5625	COM #37	Output 7	0000	0000	57FF	HEX
5626	COM #38	Output 8	0000	0000	57FF	HEX
5627	COM #40	Input Num	2	8	0	
5628	COM #41	Input 1	0005	0000	57FF	HEX
5629	COM #42	Input 2	0006	0000	57FF	HEX
5601	COM #43	Input 3	0000	0000	57FF	HEX

Address	NO.	Description	Default	Maximum	Minimum	Unit
5602	COM #44	Input 4	0000	0000	57FF	HEX
5603	COM #45	Input 5	0000	0000	57FF	HEX
5613	COM #46	Input 6	0000	0000	57FF	HEX
561E	COM #47	Input 7	0000	0000	57FF	HEX
5629	COM #48	Input 8	0000	0000	57FF	HEX

Note) Inverter Station # and Baud rate Setting: I/O-46, 47

● 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[1]
2	Freq	Frequency setting via Communication[2]
3	Cmd + Freq	Run/Stop/Reference Frequency via Communication

● COM-03 [Opt Version]

Displays version of Option Board.

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[1] Run/Stop Setting Address - Use 0x0006 in Common
[2] Freq Setting Address - Use 0x0005 in Common

< APP Group >

Address	NO.	Description	Default	Maximum	Minimum	Unit
5701	APP #01	APP mode	0	3	0	
5702	APP #02	Trv. Amp[%]	0	200	0	0.1%
5703	APP #03	Trv. Scr	0	500	0	0.1%
5704	APP #04	Trv Acc Time	20	6000	1	0.1sec
5705	APP #05	Trv Dec Time	30	6000	1	0.1sec
5706	APP #06	Trv Off Hi	0	200	0	0.1%
5707	APP #07	Trv Off Lo	0	200	0	0.1%
5708	APP #08	Aux Mot Run	0	4	0	
5709	APP #09	Starting Aux	1	4	1	
570A	APP #10	Auto Op Time	0	5940	0	
570B	APP #11	Start freq1	4999	maxFreq	0	0.01Hz

Address	NO.	Description	Default	Maximum	Minimum	Unit
570C	APP #12	Start freq2	4999	maxFreq	0	0.01Hz
570D	APP #13	Start freq3	4999	maxFreq	0	0.01Hz
570E	APP #14	Start freq4	4999	maxFreq	0	0.01Hz
570F	APP #15	Stop freq1	1500	maxFreq	0	0.01Hz
5710	APP #16	Stop freq2	1500	maxFreq	0	0.01Hz
5711	APP #17	Stop freq3	1500	maxFreq	0	0.01Hz
5712	APP #18	Stop freq4	1500	maxFreq	0	0.01Hz
5713	APP #19	Aux start DT	600	9999	0	0.1sec
5714	APP #20	Aux stop DT	600	9999	0	0.1sec
5715	APP #21	Nbr Aux'	4	4	0	
5716	APP #22	Regul Bypass	0	1	0	
5717	APP #23	Sleep Delay	600	9999	0	0.1sec

Address	NO.	Description	Default	Maximum	Minimum	Unit
5718	APP #24	Sleep Freq	19	maxFreq	0	0.01Hz
5719	APP #25	WakeUp level	35	100	0	1%
571A	APP #26	AutoCh_Mode	1	2	0	
571B	APP #27	AutoEx intv	4320	5940	0	0.1sec
571C	APP #28	AutoEx level	20	100	0	1%
571D	APP #29	Inter-lock	0	1	0	
571E	APP #30	Actual Value	0	maxFreq	0	0.01Hz
571F	APP #31	Actual Perc	0	100	0	1%
5720	APP #32	Draw mode	0	3	0	
5721	APP #33	DrawPerc	100	150	0	1%

- Maximum length for Communication

Baud rate (Kbps)	Maximum Segment length	Maximum Extension length
9.60	1000 m / 3278 feet	10000 m / 32786 feet
19.20	1000 m / 3278 feet	10000 m / 32786 feet
93.75	1000 m / 3278 feet	10000 m / 32786 feet
187.50	1000 m / 3278 feet	10000 m / 32786 feet
500.00	400 m / 1311 feet	4000 m / 13114 feet
1500.00	200 m / 655 feet	2000 m / 6557 feet
3000.00	100 m / 327 feet	1000 m / 3278 feet
6000.00	100 m / 327 feet	1000 m / 3278 feet
12000.00	100 m / 327 feet	1000 m / 3278 feet

- **Connection of terminating resistor**

```
+5V (6)
- - - - - - - - - -|
                   |    390 Ohm
                  [ ]
A-Line (3)         |
_____ |
                  [ ]   220 Ohm
                   |
                   |



B-Line (8)
_____
                      [ ]
- - - - - -31- - - - -[_]-
```

GND (5)   390 Ohm

Connect
segments

Remote
Repeater

Link Segment
(Segment without
stations)

Interface for
fiber optic

Branch segments
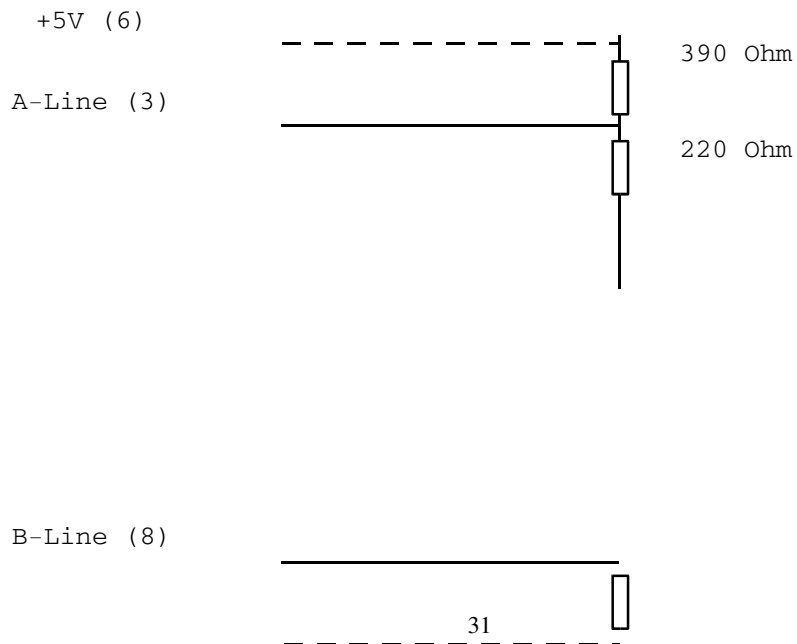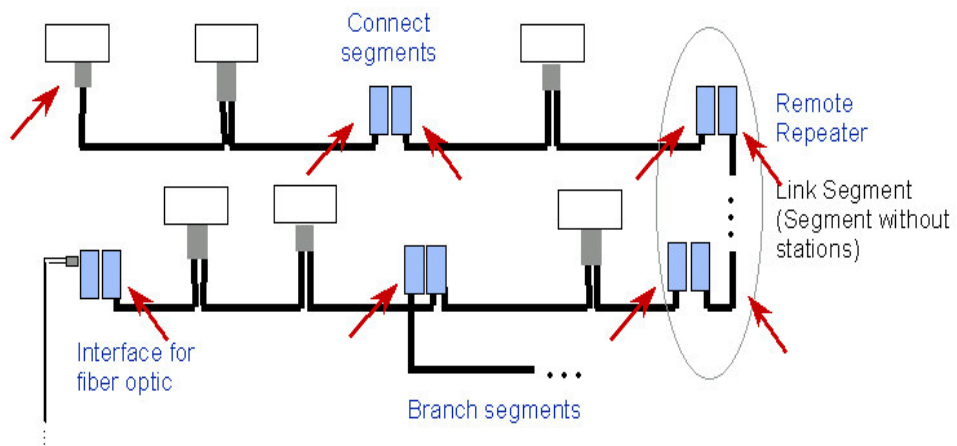
Max. Number Repeater Cascading: 9

Termination "on"

LG

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LGIS constantly endeavors to improve its product so that
information in this manual is subject to change without notice.

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