Appendix

A.1 LED indication specification

A.1.1 Applicable type

G3L-CUEA, G4L-CUEA, G6L-CUEB, G6L-CUEC, G7L-CUEB, G7L-CUEC

A.1.2 LED indication specification during normal operation

1) Operation status indication (when LED display switch not pushed)

[Table A.1] G3L-CUEA/G4L-CUEA

LED No.	Name		Normal LED status	Remark
0	RS - 232C channel	RUN	On during RS-232C channel operation/ Flash in Flash Memory Write Mode Ver.2.0	Flash Write Mode Flash per cycle of 1sec
1		TX	On during transmission via RS-232C	Flash if in communication
2		RX	On during receive via RS-232C	Flash if in communication
3		ACK	On during ACK transmission/Off after NAK transmission	
4		NAK	On during NAK transmission/Off after ACK transmission	
5		ERR	Protocol error/On during SIO-error	Flash if in error
6		MODEM	On during setting modem communication mode	
7		SYS-RUN	On dimly during interfacing with CPU of PLC	
8	RS - 422 channel	RUN	On during setting channel to RS-422	
9		TX	On during transmission via RS-422	Flash if in communication
10		RX	On during receive via RS-422	Flash if in communication
11		ACK	On during ACK transmission/Off after NAK transmission	
12		NAK	On during NAK transmission/Off after ACK transmission	
13		ERR	Protocol error/On during SIO-error	Flash if in error
14		RS-485	On during RS-485 setting/Off during RS-422 setting	
15		SYS-ERROR	Flash during serious error occurrence	H/W error

Remark

[Note1] It flashes if system H/W error or serious S/W error occurs, and the error status is indicated with upper 5 Bit (LED '0'~'4'). For the details, see 'A.1.3 LED indication specification during abnormal operation'.

[Table A.2] G6L-CUEB/G6L-CUEC

LED No.	Name		Normal LED status	Remark
0	G6L-CUEB	RUN	On during RS-232C channel operation/ Flash in Flash Memory Write Mode Ver.2.0	Flash Write Mode Flash per cycle of 1sec
1		TX	On during transmission via RS-232C	Flash if in communication
2		RX	On during receive via RS-232C	Flash if in communication
3		ACK	On during ACK transmission/Off after NAK transmission	
4		NAK	On during NAK transmission/Off after ACK transmission	
5		ERR	Protocol error/On during SIO-error	Flash if in error
6		MODEM	On during setting modem communication mode	
7		SYS-RUN /ERR	On dimly during interfacing with CPU of PLC Flash per cycle of 1sec if serious error occurs	Flash if H/W in error[Note1]
0	G6L-CUEC	RUN	On during setting channel to RS-422/ Flash in Flash Memory Write Mode Ver.2.0	Flash Write Mode Flash per cycle of 1sec
1		TX	On during transmission via RS-422	Flash if in communication
2		RX	On during receive via RS-422	Flash if in communication
3		ACK	On during ACK transmission/Off after NAK transmission	
4		NAK	On during NAK transmission/Off after ACK transmission	
5		ERR	Protocol error/On during SIO-error	Flash if in error
6		RS-485	On during RS-485 setting/Off during RS-422 setting	
7		SYS-RUN/ ERR	On dimly during interfacing with CPU of PLC Flash per cycle of 1sec if serious error occurs	Flash if H/W in error[Note1]

Remark

[Note1] It flashes if system H/W error or serious S/W error occurs, and the error status is indicated with upper 4 Bit (LED '0'~'3'). For the details, see 'A.1.3 LED indication specification during abnormal operation'.

[Table A.3] G7L-CUEB/G7L-CUEC

Name	LED name	Normal LED status	Remark
G7L-CUEB			
G7L-CUEC	PWR	On if power is normally approved	On if power approved
	RXD	On during receive via RS-422	Flash in communication
	TXD	On during transmission via RS-422	Flash in communication

2) Station No./transmission specifications indication (when LED display switch pushed)

Station No. and transmission specifications are indicated through the LED on the top of module by On/Off of LED display switch in the front of computer link module. When switch first pushed, station No. is displayed, and when the switch pushed again after switch release, transmission specifications is displayed. According to this sequence, station No. and transmission specifications are repeatedly displayed in sequence whenever the switch pushed by once. For distinguishing LED indications of station No. and transmission specifications, No '15' LED is used. When indicating station No., No.'15' LED becomes On, when indicating transmission specifications, it becomes Off, and the remaining LED indicates transmission specifications.

① LED for station No. indication (with display switch pushed once)

If LED display switch is pushed once, No.'15' LED becomes On as below table, LEDs of No. 0~4 indicate the station No. for RS-232C channel and LEDs of No. 8~12 indicate the station No. for RS-422 channel in binary value.

<table>
<tr><th>LED No.</th><th>Bit value</th><th>Indication contents</th><th>Remark</th></tr>
<tr><td>0</td><td>d0</td><td rowspan="5">Range (0~31) of RS-232C channel station No. indication</td><td rowspan="5">Station No. can be recognized by converting binary to HEXdecimal value [Note1].</td></tr>
<tr><td>1</td><td>d1</td></tr>
<tr><td>2</td><td>d2</td></tr>
<tr><td>3</td><td>d3</td></tr>
<tr><td>4</td><td>d4</td></tr>
<tr><td>5</td><td>Not used</td><td colspan="2" rowspan="3">Off during station No. indication</td></tr>
<tr><td>6</td><td>Not used</td></tr>
<tr><td>7</td><td>Not used</td></tr>
<tr><td>8</td><td>d0</td><td rowspan="5">Range (0 ~31) of RS-422 channel station No. indication</td><td rowspan="5">Station No. can be recognized by converting binary to HEXdecimal value [Note1].</td></tr>
<tr><td>9</td><td>d1</td></tr>
<tr><td>10</td><td>d2</td></tr>
<tr><td>11</td><td>d3</td></tr>
<tr><td>12</td><td>d4</td></tr>
<tr><td>13</td><td>Not used</td><td colspan="2" rowspan="2">Off during station No. indication</td></tr>
<tr><td>14</td><td>Not used</td></tr>
<tr><td>15</td><td></td><td colspan="2">On during station No. indication</td></tr>
</table>

Remark

[Note1] Example of station No. calculation

- ❑ Station No. calculation if LEDs of No.D0, D1, D4D are ON : $2^0+2^1+2^4=1+2+16=19$
- ❑ Station No. calculation if LEDs of No.D1, D3 are ON : $2^1+2^3=2+8=10$

[Note2] Function of station No. indication isn't supported separately for GM7.

② **LED for transmission specifications indication (with display switch pushed twice)**

If LED display switch is released and pushed again after pushed once, transmission specifications are displayed on LED. At this time, because No. 15 LED becomes 'Off', user can know that it is indicating transmission specifications. Transmission specifications are separately indicated according to RS-232C channel and RS-422 channel as below table.

LED No.	Bit value	Indication contents	Remark
0	d0	Communication speed of RS-232C channel (300~38400 bps)	Binary value[Note1]
1	d1		
2	d2		
3	-	Data Bit	On : 8Bit / Off : 7Bit
4		Parity Being/None	On : Being / Off : None
5		Even/Odd Parity	On : Even / Off : Odd
6		Stop Bit	On : 2Bit / Off : 1Bit
7	Not used	'Off' during transmission specifications indication	
8	d0	Communication speed of RS-422 channel (300 ~ 76800 bps)	Binary value
9	d1		
10	d2		
11	-	Data Bit	On : 8Bit / Off : 7Bit
12		Parity Being/None	On : Being / Off : None
13		Even/Odd Parity	On : Even / Off : Odd
14		Stop Bit	On : 2Bit / Off : 1Bit
15	-	'Off' during transmission specifications indication	

Transmission speed is converted from 3-Bit values of d0 ~ d2 to HEX, of which value is shown as below table. (see below table.) But, 76800 bps is provided in RS-422, and is available in Ver. 1.3 or later version of Cnet I/F module.

LED value	LED lighting indication	RS-232C/RS-422 channel
0	All Off	300, 76800 bps
1	d0	600 bps
2	d1	1200 bps
3	d0,d1	2400 bps
4	d2	4800 bps
5	d0,d2	9600 bps
6	d1,d2	19200 bps
7	d0,d1,d2	38400 bps

A.1.3 LED indication specifications during abnormal operation

LED operations if abnormal are divided into two cases.

1) When in state of SYS-ERROR LED Off, the communication error LED flashes at intervals, it means that installation of communication cable or basic parameter setting is abnormal. At this time, it can be solved by seeing chapter 11, Troubleshooting.
2) When serious H/W error occurs, No.15 LED (SYS-ERROR) flashes in period of 1 sec, and the error state is indicated by LED No. 0 – 3. When serious H/W failure occurs, the various errors are indicated by LED No. 0 - 3, of which LED No. 0 is lower Bit (d0), LED No. 3 is upper Bit (d3), and these vallues are converted from binary into decimal values to indicate error code.

[Table A.4] Error codes during serious failure occurence

Error code[Note1]	Error contents	Remark
1	Internal memory diagnosis error	H/W error
2	Common use memory reading/writing error	
3	Common use memory access error	
4	PLC CPU interface stop	
5	Flash memory reading/writing error	
6	UART (NS-16550) access error	
7	Operation mode setting error	Mode setting abnormal
8	Reserved	Not used
9	Address error	Other error
10	Invalid instruction	
11	Zero divide	
12 ~ 15	Reserved	Not used

If an error code is indicated except error codes of No.'5' & '7', Cnet I/F module is seriously damaged. Contact our company's service station to solve the problem. For errors of No. '5' & '7', refer to chapter 11, Troubleshooting.

Remark

[Note1] If in serious failure, SYS-ERROR LED flashes in period of 1 sec and the error code is indicated by LED No. 0~3. Example of error code calculation is as below.

- ❑ If LED No.0,1,2 are ON, error code value calculation : $2^0+2^1+2^2=1+2+4=7$
- ❑ If LED No.1,3 are ON, error code value calculation : $2^1+2^3=2+8=10$

A.1.4 LED indication specification during power on

This module performs self-diagnosis through self-H/W check and CPU and interface of PLC.

When self and PLC CPU interface checks are OK, after LED '0' - '5' become On in sequence, RS-232C channel LED and RS-422 channel LED become On, and 'RUN' LED becomes On, then normal operation starts. If after power on error occurs during the self-diagnosis, SYS-ERROR LED blinks, and LED of error occurrence item lights according to error code. For the details, see '9.2 Diagnosis during power on'.

A.2 Error code table

A.2.1 Error code for user defined communication

If error occurs in execution of function block with SND_MSG & RCV_MSG function block for user defined communication, the error code is indicated on status output of function block. The following table is for error codes occurred in execution of function

STATUS value		Meaning	Action to take
HEX	Dec		
H0E	14	Input to FNAM isn't present or more than 16 figures	Verify input to FNAM.
H10	16	Position of Cnet I/F module is incorrectly specified.	Enter SLOT_NO value correctly.
H11	17	Cnet I/F module isn't applied to the slot assigned to SLOT_NO, or is out of order.	Check operation status of Cnet I/F module of assigned slot.
H12	18	Input parameter of function block is incorrect (Ex.: CH, LEN1,...)	Check input parameter.
H14	20	Response frame not requested has been received.	Verify receive frame of self station or transmission frame of other station again.
H15	21	Response frame from Cnet I/F module has not been received.(waiting time excceded)	Verify whether Cnet I/F module is user defined communication mode.
H40	64	Operation of RS-232C/422 channel is not RUN.	Perform operation RUN with frame editor.. (Menu: [Online Run/Stop])
H41	65	Frame names used in frame editor and in communication command do not fit each other.	Reconcile frame names in frame editor and frame entered in FNAM.
H42	66	Frame name can not be found due to abnormal CPU during operation. (during transmission)	1) Download frame again. 2) Check if CPU is normal or not.
H43	67	Frame specified in FNAM has not been received from other station.	1) Verify receive frame again. 2) Verify other station's transmission frame again.
H44	68	Frame has not been downloaded from frame editor.	Download frame.

STATUS value		Meaning	Action to take
HEX	Dec		
H0E	14	Input to FNAM isn't present or more than 16 figures	Verify input to FNAM.
H45	69	Error occurs during conversion ASCII ↔HEX	Verify whether received data is ASCII or HEX again.
H46	70	Array size specified in frame editor and data size(specified in LEN) used in commu-nication command do not fit each other.	Confirm data size again and fit it. (Data size is Byte value)
H67	103	Incorrect frame definition.	1) Verify contents of appropriate frame again with frame editor. 2) Download frame again.
H68	104	Frame has not been downloaded from frame editor.	Download frame.
H73	115	Operation mode is not user defined commu-nication mode.	Correctly fit mode switch. User defined communication mode For the details, see '4.1 Operating mode setting.'

A.2.2 Error code for dedicated slave communication

For dedicated mode communication, the station operated by slave responds via ACK or NAK frame. And NAK responds including error code in NAK frame to distinguish error types. The following table is for error codes for NAK response used in slave station of dedicated communication.

Error code	Error type	Contents	Action to take
0001	PLC system error	Interface with PLC impossible	Power On/Off
0011	Data error	Error occurred when ASCII data value is converted into digits	Check if other character than upper/lower cases ('%','_','.'), and digits has been used as variable name or data, correct and execute again.
1132	Device memory error	Wrong device memory specified	Inspect device type
1232	Data size error	Execution data number exceeding 120 Bytes	Correct data length
1332	Data type error	Data types mismatch between variables	Equalize data types
1432	Data value error	Data value not digits	Inspect data value
2432	Data type error	Data type mismatch with actual variable	Equalize variable and data type of PLC program
1152	Remote control not allowed	'Remote Acdess Right' not allowed in PLC parameter.	Set Remote Acdess Right to allowed, and then execute again.
7252	PLC not operated	No PI to operate PLC	Create PI with PI creation command.
2652	PI not created	No Domain in PLC	Download Domain to PLC.
4252	1) Operation mode change error 2) PI created already	1) Mode status .RUN => PI_STOP Only .PAUSE=>PI_RESET,PI_RESUME .STOP=>PI_START Only .DEBUG<-->PI_RESET Only Other errors when changing operation mode 2) Execute PI creation in state of PI created already	1) Execute again with changeable operation mode. 2) Execute after PI deleted

Error code	Error type	Contents	Action to take
4201 4202 4203 4204	Operation mode change error	4201: Present operation mode RUN 4202: Present operation mode STOP 4203: Present operation mode PAUSE 4204: Present operation mode Debug	Execute again with changeable operation mode. (indicated in Cnet V1.5 or later)
4142	Download initialization error	When downloading with Domain not deleted	Check if Domain deleted or not. Set remote control by PLC basic parameter communication in GMWIN to allowed, and then execute again.
4200	Domain Delete impossible	When executing Domain Delete with PI not deleted	Delete PI and then execute again.
4242	Upload initialization error	* Domain not downloaded * Domain name mismatch	Check if Domain deleted or not Execute again after checking domain name.
4342	Down/upload sequence error	Frame number mismatch	Execute again from beginning after adjusting frame number.
4442	Down/upload initialization error	Initialization command not executed	Execute again down/upload after executing initialization command.
0090	Monitor execution error	Registration number of appropriate monitor not registered.	Execute again after registering monitor.
0190	Monitor execution error	Registered number exceeding range	Execute again after adjusting monitor registration number to 31 or less.
0290	Monitor registration error	Registered number exceeding range.	Execute again after adjusting monitor registration number to 31 or less.
No response.	No response	* Station No. error/ BCC error * Main command/command type error * Header and tail character error * Cable error * Operation mode error. * Communication speed/stop/data/ parity bit error. * PLC error.	Check and take actions for error contents that may occur.

A.2.3 Error code for dedicated master communication

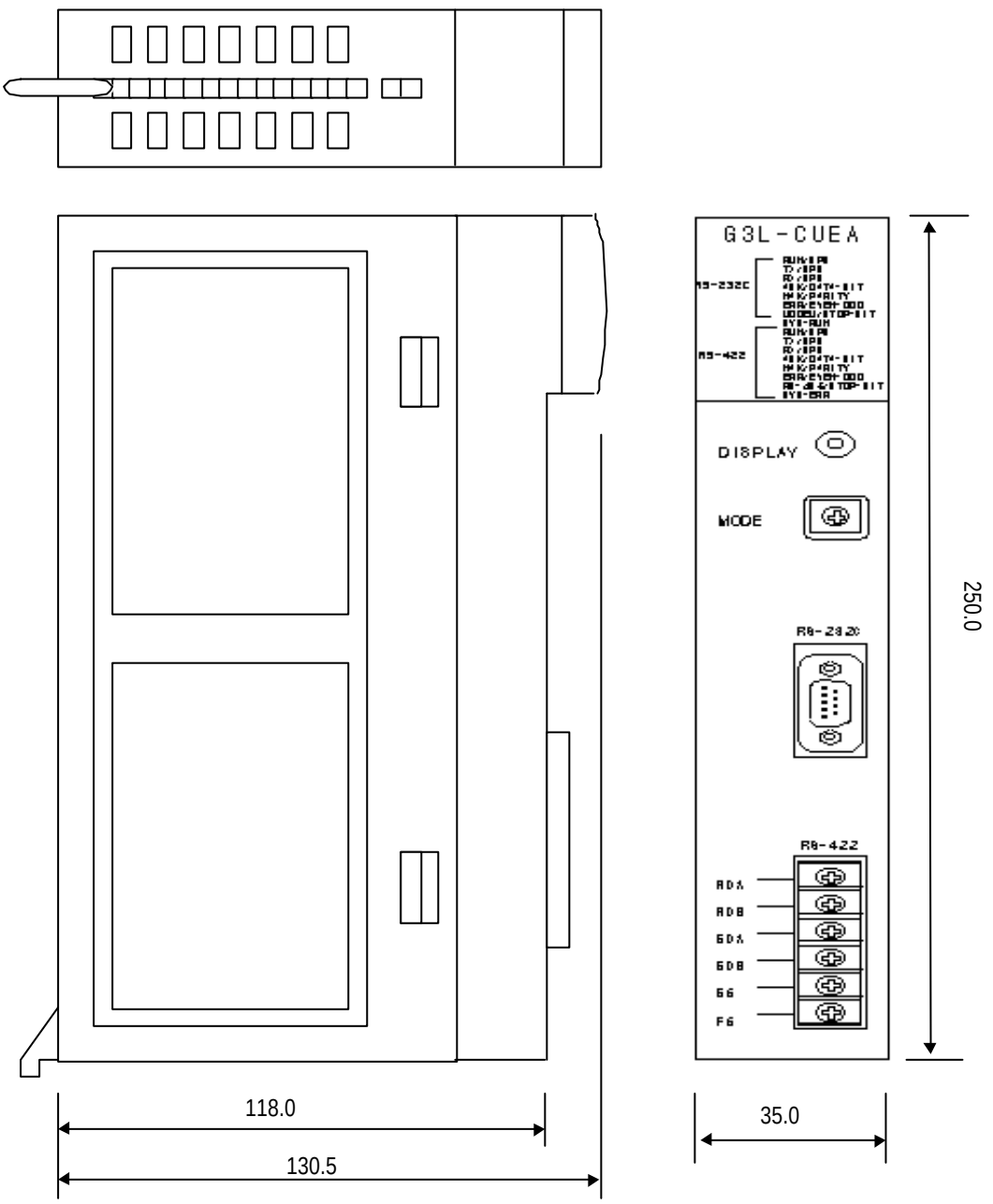
As for the station operated in dedicated master communication mode and required to compose master program using GM_RD/GM_WR function block, error information is indicated by output error code on status output of the function block if error resulted by execution of function block occurs. The following table is for error codes for the function block of dedicated communication. Error code is displayed in a decimal unit

STATUS value	Meaning	Action to take
10	No response from correspondent station.	1) Check setting of correspondent station No. 2) Check dedicated mode for operation of correspondent station. 3) Check communication basic parameter
17	Position of Cnet I/F module is incorrectly specified.	Check if SLOT_NO value is correct.
21	No response from Cnet I/F module	1) Check operation mode of local Cnet module 2) Check channel No.
35	NAK from correspondent station has been received.	Check variable name (%MB,%QB,%IB– BYTE only available)
37	Input parameter setting is incorrect	Check data length

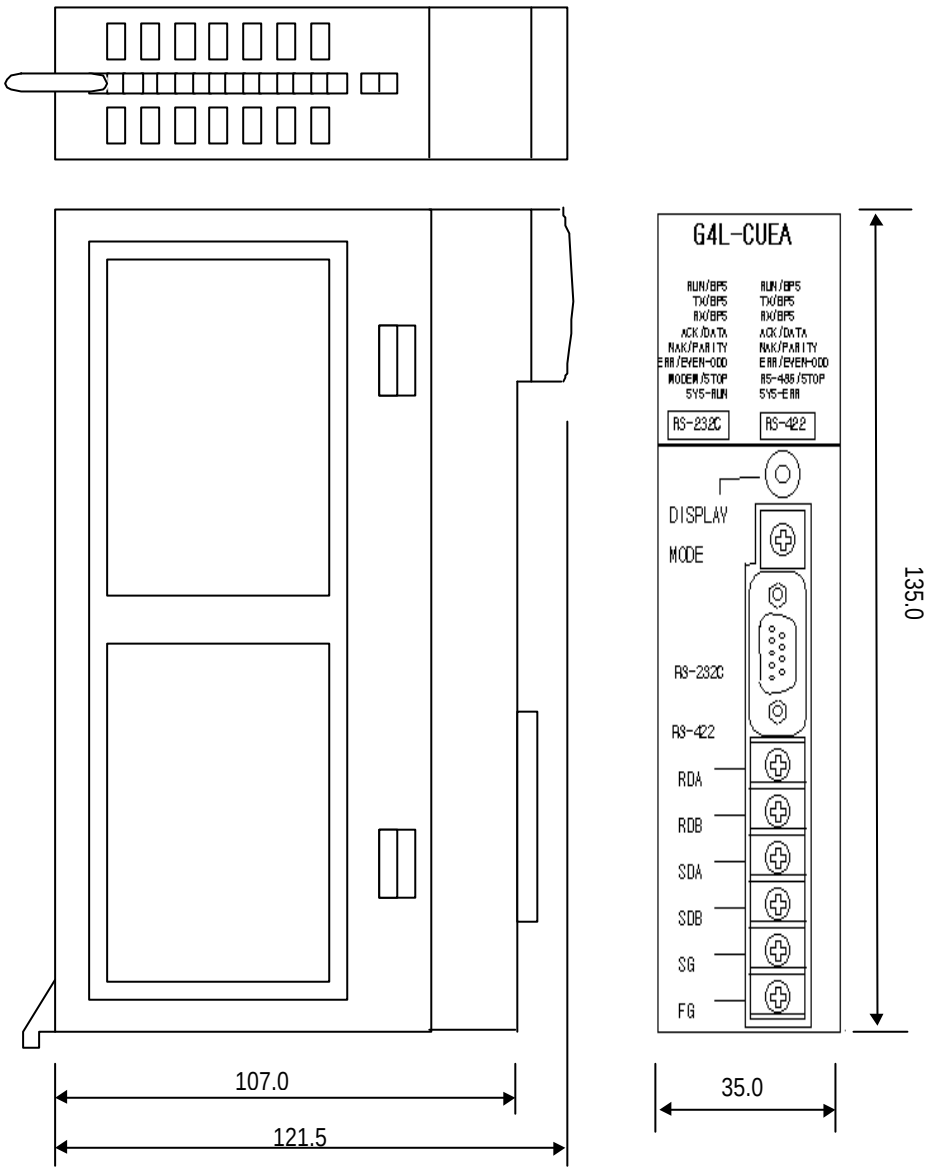
A.3 Dimensions of appearance

· **G3L-CUEA**

Unit mm

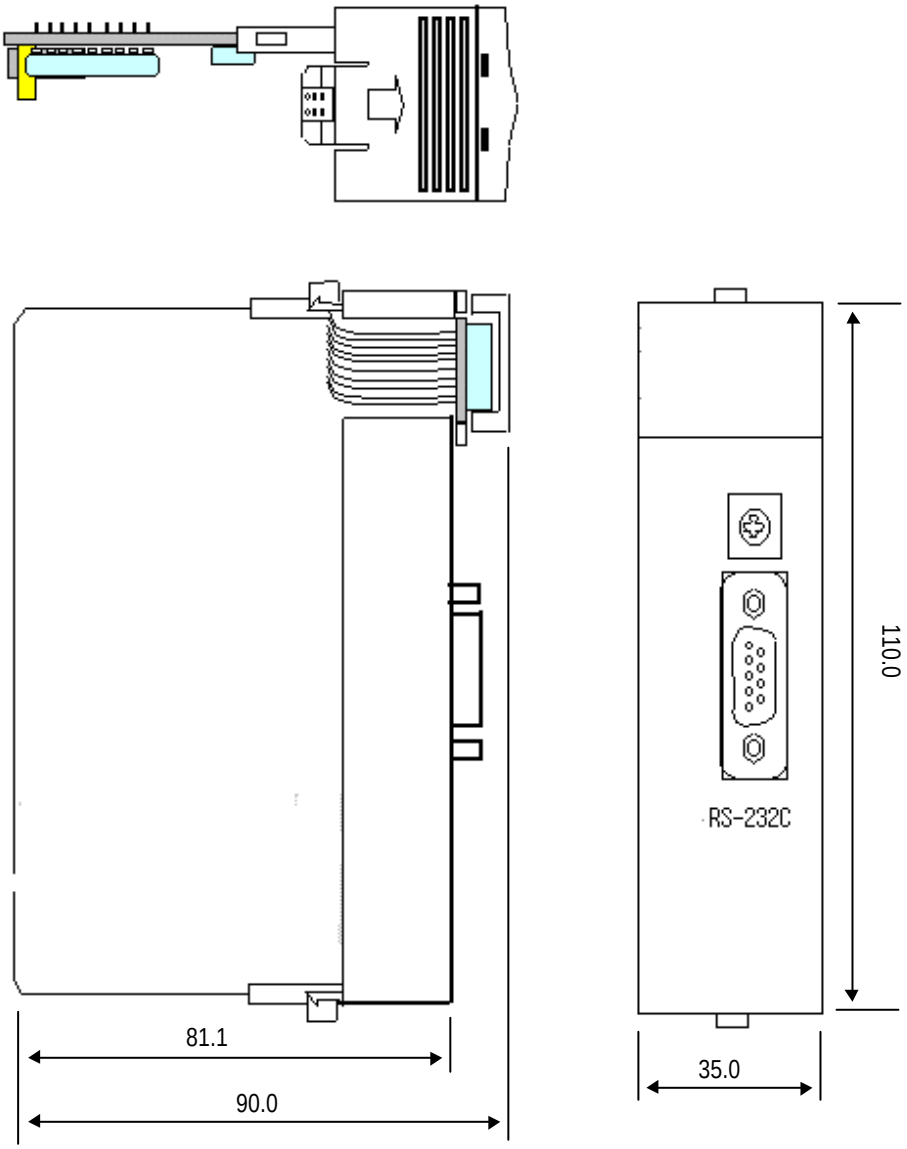


· **G4L-CUEA**


G4L-CUEA
RS-232C
RS-422
DISPLAY
MODE
RDA
RDB
SDA
SDB
SG
FG
135.0
107.0
121.5
35.0

· **G6L-CUEB/G6L-CUEC**

Dimensions of G6L-CUEB & G6L-CUEC are identical with each other.



· **G7L-CUEB/G7L-CUEC**

G7L-CUEB and G7L-CUEC has the same dimensions.