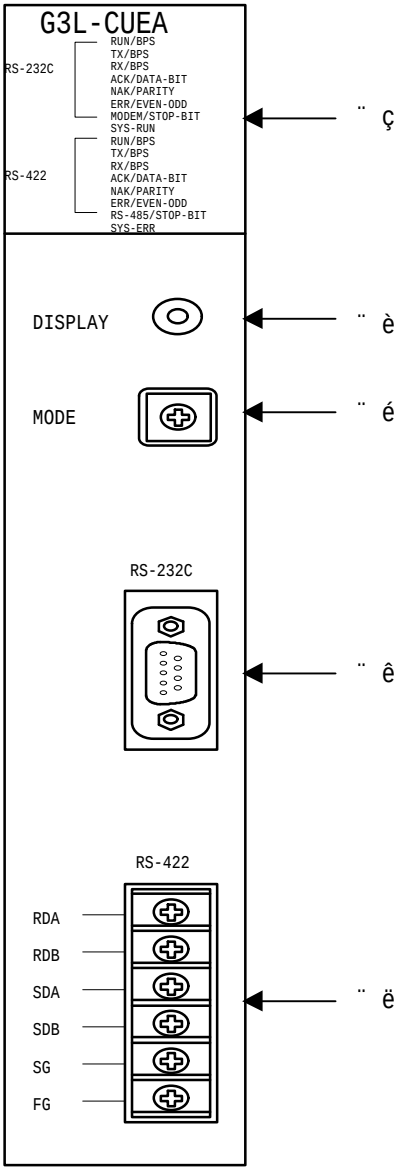
Chapter 3 Product specifications

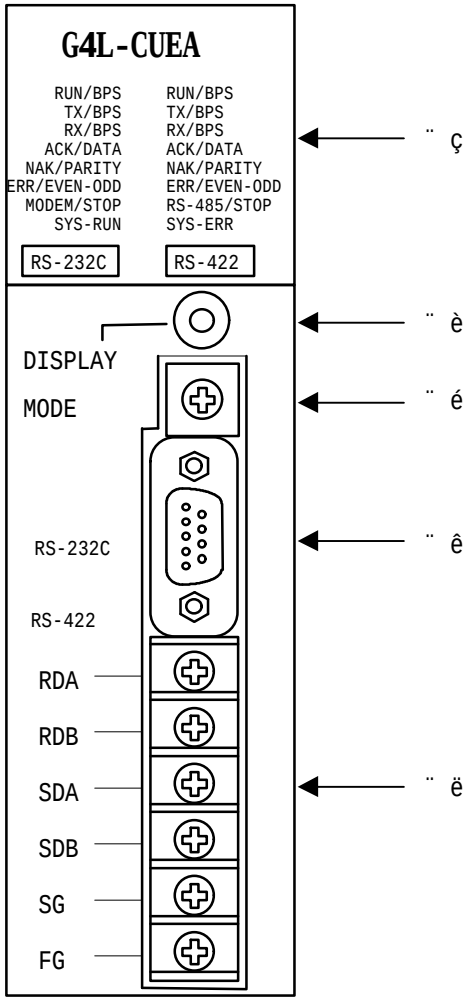
3.1 Structure

3.1.1 Part names of G3L-CUEA



No.	Name	Contents
¨ ç	LED displaying section	Indication of operating status of G3L-CUEA(see Appendix A1)
¨ è	Display switch	Switch for indication of parameter and station number (see Appendix A1)
¨ é	Mode switch	Setting of operation mode(see 4.1)
¨ ê	Connector RS-232C	Connector RS-232C for connection with external devices
¨ ë	Connector RS-422/485	Connector RS-422/485 for connection with external devices

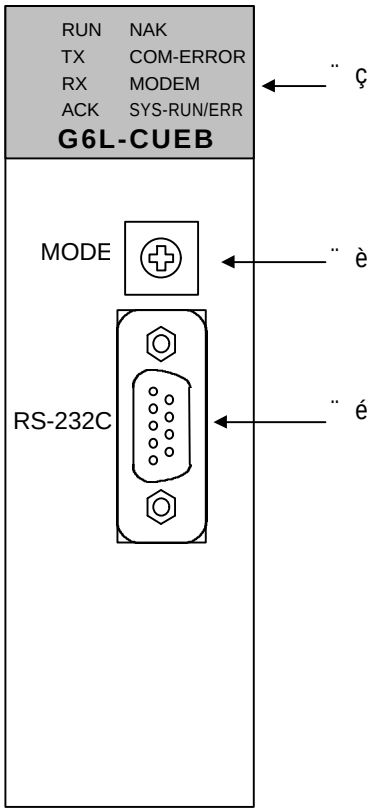
3.1.2 Part names of G4L-CUEA



No.	Name	Contents
¨ ç	LED displaying section	Indication of operating status of G4L-CUEA(see Appendix A1)
¨ è	Display switch	Switch for indication of parameter and station number (see Appendix A1)
¨ é	Mode switch	Setting of operation mode(see 4.1)
¨ ê	Connector RS-232C	Connector RS-232C for connection with external devices
¨ ë	Connector RS-422/485	Connector RS-422/485 for connection with external devices

3.1.3 Part names of G6L-CUEB

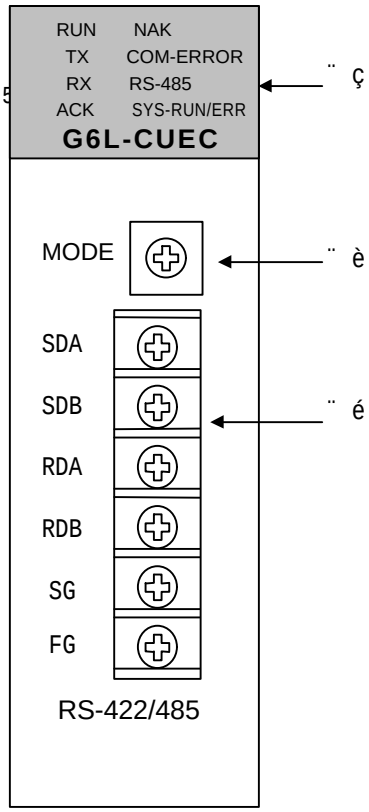
[G6L-CUEB]



No	Name	Contents
¨ ç	LED displaying section	Indication of operating status of G6L-CUEB(see Appendix A1)
¨ è	Mode switch	Setting of operation mode(see 4.1)
¨ é	Connector RS-232C	Connector RS-232C for connection with external devices

3.1.4 Part names of G6L-CUEC

[G6L-CUEC]



No	Name	Contents
¨ Ç	LED displaying section	Indication of operating status of G6L-CUEC(see Appendix A)
¨ è	Mode switch	Setting of operation mode(see 4.1)
¨ é	Connector RS-422/485	Connector RS-232C for connection with external devices

3.2 General specifications

Table 3.1 describes the environmental,electric,and mechanical specifications of Cnet communication module

Table 3.1 General specifications

<table>
<tr><th>No.</th><th>Item</th><th colspan="6">Specification</th><th>Related specifications</th></tr>
<tr><td>1</td><td>Operating temp.</td><td colspan="6">0¡ É ~ +55¡ É</td><td></td></tr>
<tr><td>2</td><td>Storage temp.</td><td colspan="6">-25¡ É~+70¡ É</td><td></td></tr>
<tr><td>3</td><td>Operating moist.</td><td colspan="6">5~95% RH, non-condensing</td><td></td></tr>
<tr><td>4</td><td>Storage moist.</td><td colspan="6">5~95% RH, non-condensing</td><td></td></tr>
<tr><td rowspan="8">5</td><td rowspan="8">Vibration proof</td><td colspan="5">For discontinuous vibration</td><td rowspan="8">Each 10 times in X,Y,Z directions</td><td rowspan="8">ICE 1131-2</td></tr>
<tr><td>Frequency</td><td>Acceleration</td><td colspan="3">Amplitude</td></tr>
<tr><td>10¡ ~57Hz</td><td>-</td><td colspan="3">0.075mm</td></tr>
<tr><td>57¡ ~150Hz</td><td>9.8 m/s²</td><td colspan="3">-</td></tr>
<tr><td colspan="5">For continuous vibration</td></tr>
<tr><td>Frequency</td><td>Acceleration</td><td colspan="3">Amplitude</td></tr>
<tr><td>10¡ ~57Hz</td><td>-</td><td colspan="3">0.035mm</td></tr>
<tr><td>57¡ ~150Hz</td><td>4.8 m/s²</td><td colspan="3">-</td></tr>
<tr><td>6</td><td>Impact proof</td><td colspan="6">* Max. impact acceleration:147 m/s² (15g)
* Authorized time : 11ms
* Pulse wave : Sign half-wave pulse(each 3 times in X,Y,Z directions)</td><td>IEC 1131-2</td></tr>
<tr><td rowspan="5">7</td><td rowspan="5">Noise proof</td><td>Square wave Impulse noise</td><td colspan="5">¡ 1,500V</td><td>Test spec. reference within LG Industrial Systems</td></tr>
<tr><td>Static electric discharging</td><td colspan="5">Voltage : 4kV(Contact discharging)</td><td>IEC 1131-2, IEC 801-2</td></tr>
<tr><td>Radiation eletro-magnetic field noise</td><td colspan="5">27~500 MHz, 10V/m</td><td>IEC 1131-2, IEC 801-3</td></tr>
<tr><td rowspan="2">Fast transient/burst noise</td><td>Segment</td><td>Power module</td><td>Digital input/output (24V or more)</td><td colspan="2">Digital input/output (24V or more) Analog input/output communication interface</td><td rowspan="2">IEC 1131-2, IEC 801-4</td></tr>
<tr><td>Voltage</td><td>2kV</td><td>1kV</td><td colspan="2">0.25 kV</td></tr>
<tr><td>8</td><td>Ambient conditions</td><td colspan="6">No corrosive gas and dust</td><td></td></tr>
<tr><td>9</td><td>Operating height</td><td colspan="6">Up to 2000m</td><td></td></tr>
<tr><td>10</td><td>Pollution level</td><td colspan="6">2 or less</td><td></td></tr>
<tr><td>11</td><td>Cooling type</td><td colspan="6">Natural air cooling</td><td></td></tr>
</table>

REMARK

1) IEC : International Electro-technical Commission, International non-governmental organization enacting international standards of electric and electronic fields.

3.3 Performance specifications

Table 3.2 describes the performance specifications of computer link module.

Table 3.2 Performance specifications

Item		Specifications	
Serial communication channel		RS-232C 1 channel	RS-232C standards conformed
		RS-422/485 1 channel [1]	RS-422/485 standards conformed
Modem connection function		Remote communication with external devices such as computer, etc. is possible via public telephone line by connecting external modem to Cnet [2].	
Operating mode (Operating mode can be set by operating switch for RS-232C/RS-422 channels respectively.)		Dedicated protocol	Supporting multidrop/1:1 communication by using dedicated protocol for LG Industrial Systems.
		GMWIN protocol	PLC remote control is possible through GMWIN by using GMWIN connection function for GLOFA PLC.
		User defined protocol	Operated by user defined protocol using frame editor(for other company's interface).
Data type	Data bit	7 or 8	With frame editor, basic parameter is able to be selected [3].
	Stop bit	1 or 2	
	Start bit	1 or 2	
	Parity	Even/Odd/None	
Channel selection		Stand-alone/interlocking channel are able to be selected by operating mode switch [4].	
Synchronization type		Asynchronous type	
Transmission speed(bps)		Any speed in 300/600/1200/2400/4800/9600/19200/38400/76800 bps can be selected [5].	
Station No. setting		Set by using frame editor, Max. 32 stations are able to be set(from 0 to 31).	
Transmission distance		RS-232C : Max. 15m(extendible on using modem)	
		RS-422 : Max. 500m	
Diagnosis function		Loop-back diagnosis	
		Indication of operating status with 16 LEDs during operating (GM6 : 8 LEDs)	
Current consumption		160mA or less	

Remark

1) With frame editor, selection of RS-422 or RS-485 is possible.
2) In case of connecting channel RS-232C to modem, the modem connection is selected in setting menu of RS-232C communication type of frame editor.
3) Transmission spec. is able to be set according to each of RS-232C and RS-422 in case of the operating mode of the stand-alone channel.
4) Channel selection is set between operating mode by channel and stand-alone/interlocking channel by the operating mode switch. Change of channel mode is impossible during operating.
5) 76800 bps is provided in RS-422, and can be used in Cnet module of Ver. 1.3.
(GM6 : Max. 38400 bps is available)

3.4 Cable specifications

When using communication channel RS-422 or RS-485, twisted pair cable for RS-422 shall be used in consideration of communication distance and speed. Table 3.3 describes recommended specifications of cable. Also when using another cable than recommended one, the cable conformed to characteristics of Table 3.3 shall be used.

- Item : Low Capacitance Lan Interface Cable
- Type : LIREV-AMESB
- Size : 2P x 22AWG (D / 0.254 TA)
- Manufacturer : LG CABLE Co., Ltd.

Table 3.3 Specifications of GLOFA Cnet twisted pair cable

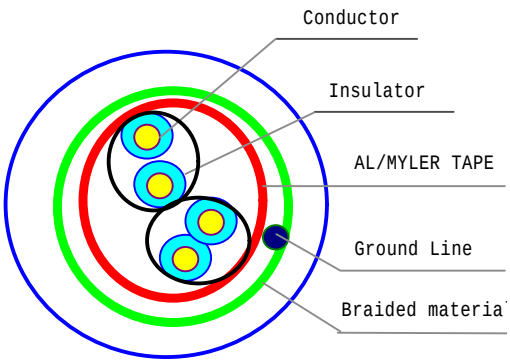
1) Electric characteristics

Test item	Unit	Characteristics	Test conditions
Conductor resistance	¥ ØKM	59 or less	Normal temp.
Withstanding Voltage(DC)	V/1min	Withstands for 1 min. at 500V	In air
Insulation resistance	MEGA ¥ ØKM	1,000 or more	Normal temp.
Static electricity capacity	Pf/M	45 or less	1KHz
Characteristic impedance	¥ Ø	120¡ ¾12	10MHz

2) Characteristics of appearance

Item			Solid cable	Stranded cable
Conductor	Core number	Pair	2	2
	Size	AWG	22	22
	Composition	No./ § ®	1/0.64	7/0.254
	Outer dia.	§ ®	0.64	0.76
Insulator	Thickness	§ ®	0.55	0.55
	Outer dia.	§ ®	1.64	1.76

Figure 3.1 Structural drawing

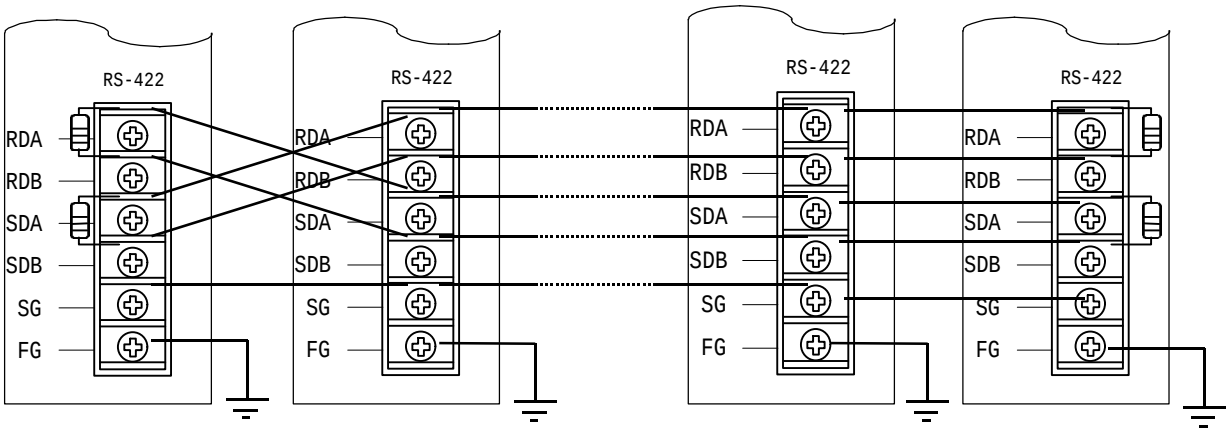


3.5 Terminal resistance

When the communication via channel RS-422, terminal resistor from external must be connected. Terminal resistor has the function to prevent distortion of signal by reflected wave of cable when long-distance communication, the same resistor(1/2W) as characteristic impedance of cable must be connected to terminal of network.

When using the recommended cable in 3.3, connect terminal resistor of 120¥ Ø both ends of cable. Also when using another cable than recommended one, the same resistor(1/2W) as characteristic impedance of cable must be connected to both ends of cable.

1) How to connect terminal resistor during RS-422 connection



2) How to connect terminal resistor during RS-485 connection