Chapter 7 Installation and start up

7.1 Installation

7.1.1 Precautions on installation

In case of GLOFA-GM4/6 as a maximum 2 sets of Dnet I/F module can be mounted on basic base.

1) Selecting of adequate communication module after verifying standard elements required for system construction.
2) Prepare accessories like as cable and tap, terminal resister will be using for this communication module
3) According to the communication speed which will be used for this communication module, all communication module speed must be coincident to that speed respectively and must follow specification of the cable.
4) In case you are using tap, don't forget to use terminal resister on both ends of taps
   If it is the system structured with single network, please be set without any duplicated station number. At not powered PLC on status, mount master module on base and set station number of communication and communication speed.
5) When mount this communication, verify if there is any foreign particle on base connector to be mounted and verify the status of connector pin status.
6) All communication module can not be mounted on expanded base, necessarily be attached on slot position of standard base the nearest CPU.
7) When mount this module, please be aware to be connected necessarily to base board or excellent connection to the opposite. If the connection is incorrect it may cause the problem on CPU and interface
8) The communication speed will be used for this communication module is 125k,250k,500kbps, if you want to change communication speed after setting of it turn the power off and get it changed and changed mode will be applied just after turn the power on again.

7.1.2 Required materials for installation

Required material	Dnet I/F module
Comm. cable	Thick cable/Thin cable
Tap/terminal resister	4,8port tap, Terminal resister:121Ω, 1%, 1/4W
24VDC supplying equipment	General power equipment
Connection connector	Phoenix, 5 pin Female connector

7.1.3 Installation

1) Precautions on installing connector

Please be aware of followings before installation of connector

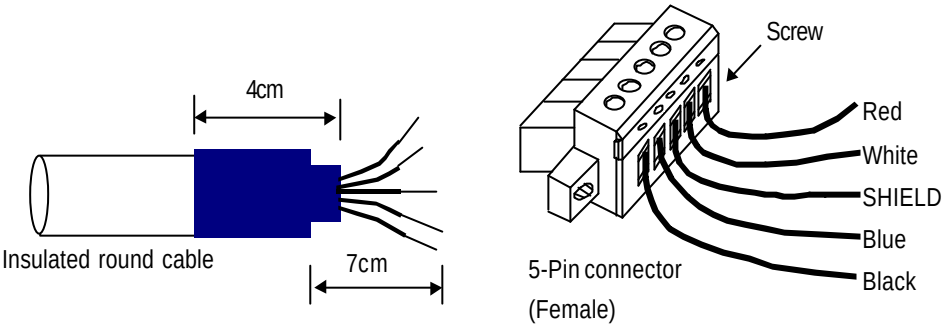
If the signal is not good on cable,

(1) If the module installed on system is on moving, then install it as the operation stop status.

(2) If currently it is powered on status then power off before working

(3) When the installation finished then fix the cable tightened up in order not to be go out

2) Installation method for connector



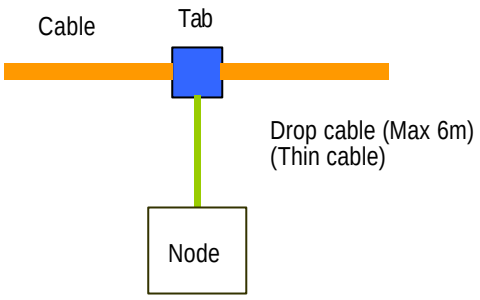
(1) Peel off the cable clothes about 7cm for cables connection

Cut off shrinking packaging cover about 4cm and wind it up to cable and wrap exposed conduct part and insulation clothes.

(2) Peel off the clothing of cable about 8mm from both ends and adhere to cable through getting shrinking packaging cover heated.

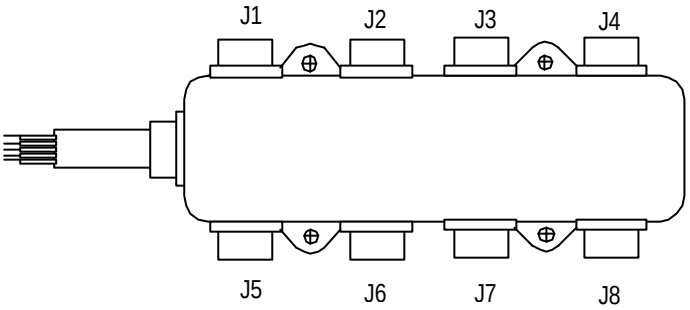
(3) Insert the peered off cable into clamp screw on adequate area and tighten the screw (Please be careful whether the signal name between both cable and connector is coincident from each other.

There is two types of cable connection method like as using tap type or drop type connection method. You'd better to prepare DC 24V power at reasonable place to sustain voltage at the time getting Dnet I/F module much or getting the cable longer.



3) Installation method of Tap (8-Port tap example)

As a maximum 8-connection and separate is possible through connection to trunk line of device port tap.



(1) Drop line consisted with Thick or Thin cable is capable for connection to device with tap. In case of open-style tap, can use following 3 types of connector

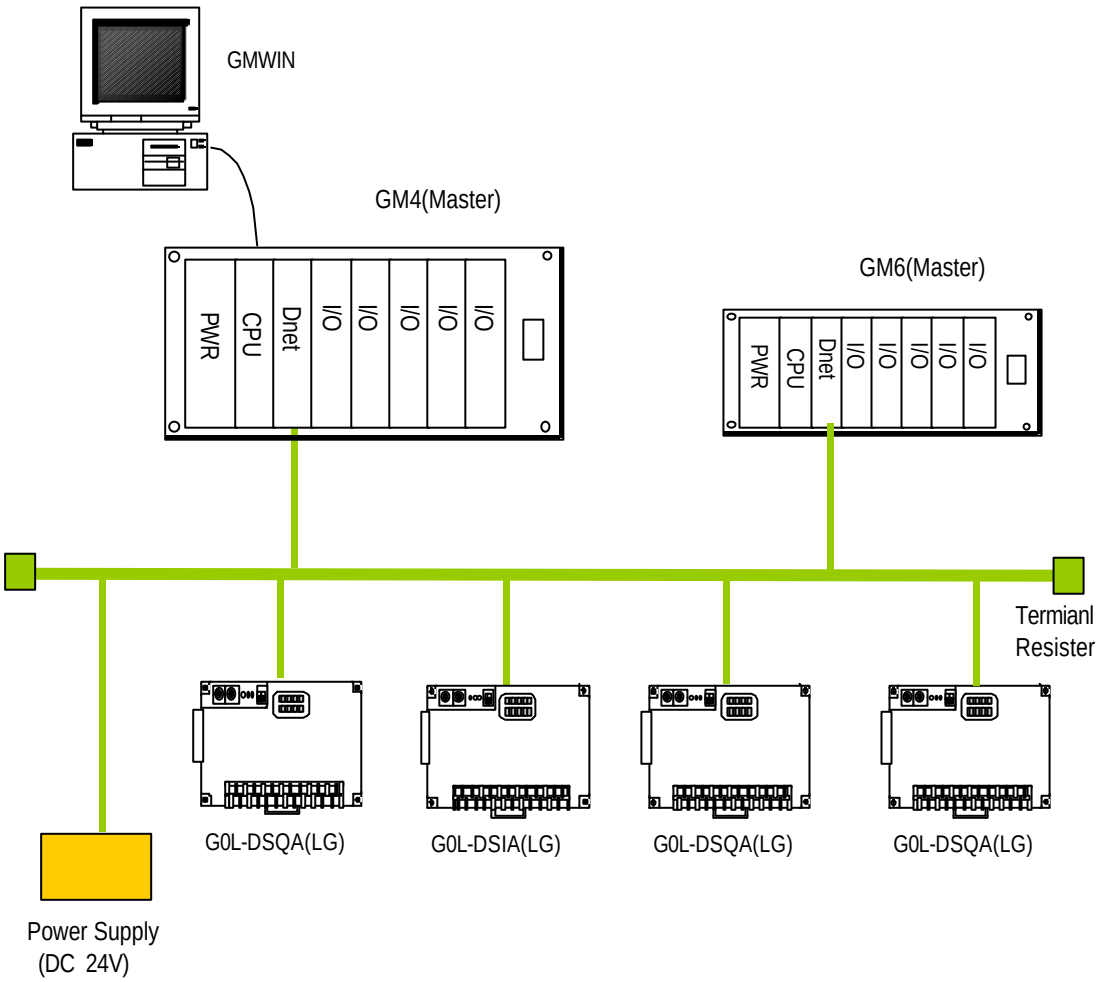
- Pluggable screw type
- Hard-wired screw type
- Soldered type

The best way of cable connection is connection of drop line while system is not powered on status.If you connect while the system is operating then check the connection status with other devices and connect to trunk line in oredr not to impact communication.

(2) When connect to trunk line do not excess over maximum tolerance length.

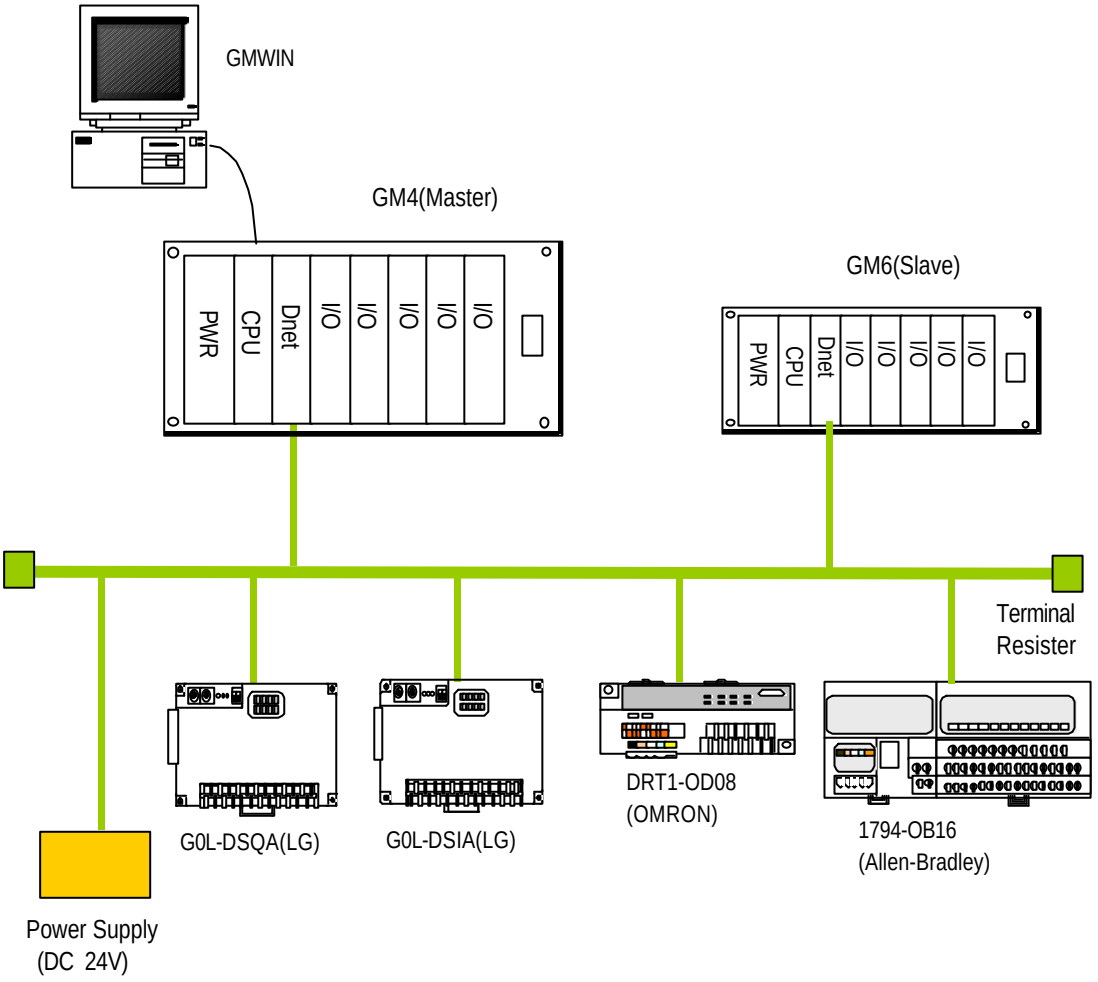
7.1.4 Examples

Structure 1
This is a structure that G4L-DUEA and G6L-DUEA has input, output slave(remote) module respectively as a master. At this time slave module can have only one master.



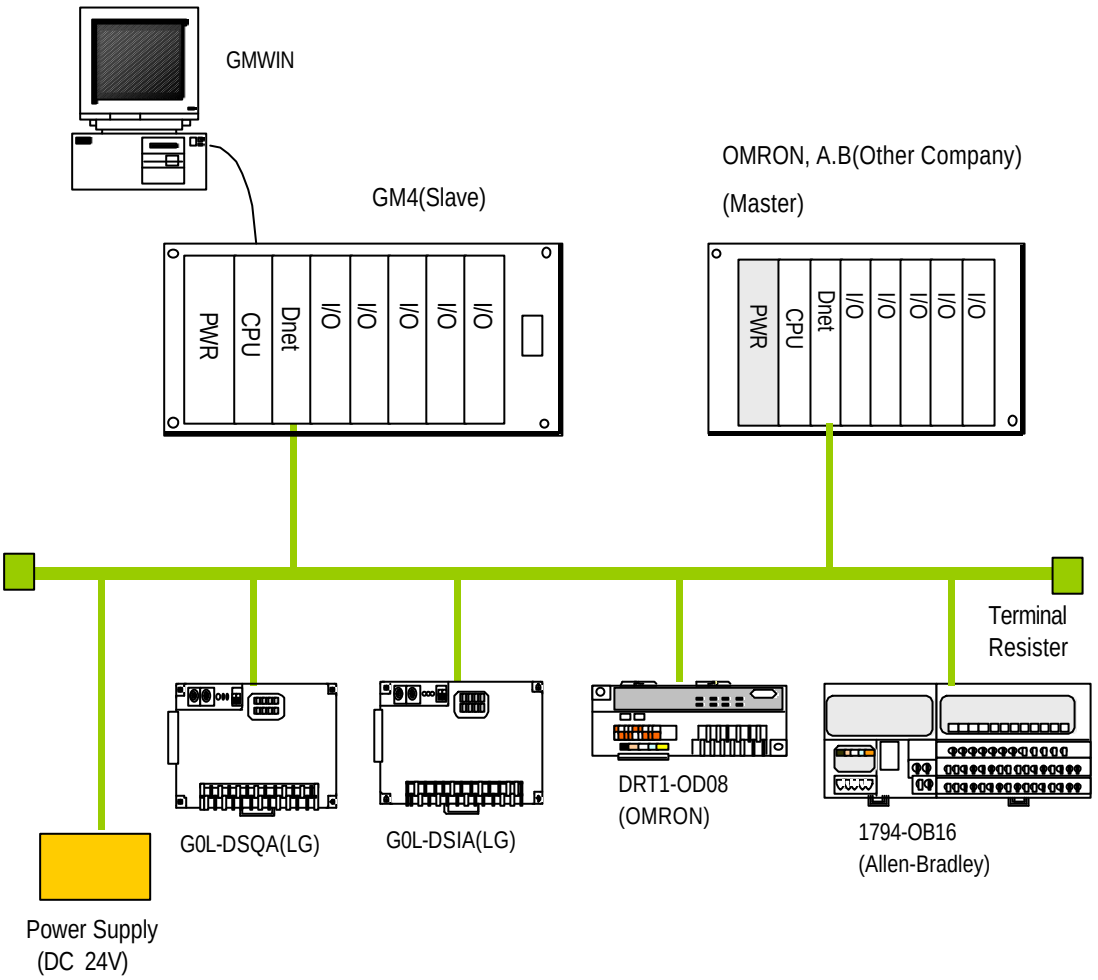
Structure 2

This is a structure that G4L-DUEA and G6L-DUEA has input, output slave(remote) module respectively as a master. at this time G6L-DUEA module moves as a slave.



Structure 3

This consists of master which Dnet I/F module like as OMRON or A.B(Allen-Bradley) and slave like as G4L-DUEA. At this time other company's master module must create program with using of each company's software tool and has to set communication speed according to communication mode selection on master.



7.2 Start up

When install the cable, terminal resister must be connected to both ends of network. If no terminal resister is exist there may be communication error and after finished connecting get the power on to verify LED operation whether it's normal. If it's normal download the pertinent program to PLC with using of GMWIN.

7.2.1 Precautions on structuring system

1) All station number should be different from each other including this module. If duplicated station number is used for connection then there may be communication error as it normal communication is impossible.
2) Please use communication cable as designated specification one. If you do not use this designated specification cable then it can not be assured that communication to the maximum cable length or there may be communication error.
3) Please check short or open cable prior to communication cable installation
4) Please tighten the connector for strong cable connection, if not it may cause severe communication error.
5) In case of long distance cable connection, please layout the wiring as keep the cable aside from power line or induced noise.
6) When connecting the communication cable and connector power plug, communication line and shield line must be connected in order. if not there will be mulfunction like as power off or breaking of communication.
7) If LED operating is abnormal status, please refer to ' chapter 8 trouble shooting' and verify the the special causes if special causes appears continuously after correction then call to service station.

7.2.2 Checking items prior to start up

Following explanes about checking items before starting up.

1) Communication module be mounted on PLC

Checking item	Contents
Installation and Checking of basic S/W	- Is that normal to install and operate GMWIN ?
Connection of communication cable(only in case of cable connected)	- Is the communication cable connection and used Tap status is enough
Mounting module	- Is the cable connection is open loop type ?
Checking switch	- Is the moving mode switch normally acts ?

2) Start up sequence

Shows the sequences after finishing installation to start up on PLC.

Start
Turn on Power : 1) Check input power 2) Check communication cable connection 3) Setting of mode switch like as communication speed, station number 4) Get the power in 5) Check LED lighting on power module 6) Check LED status on CPU module → In case abnormal, refer to instruction of PLC model for trouble shooting 7) Check the status of communication module LED →In case abnormal, refer to instruction of PLC model for trouble shooting

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Programming : Create program on GMWIN and write it down on CPU

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Check sequence : Check operating of communication module according to program

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Edit program :

Correct the program if problems is shown on sequence program

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Sustain of program :

1) Store the program on floppy disk or hard disk

2) Print out circuit drawing and list

3) If necessary store the program on memory module

Finished

7.3 Maintenance and Checking

7.3.1 Daily checking

Daily check item is like following

[Table 7.3.1] Daily check item

Check Item		Check category	Decision	Action
Condition of cable connection		Loosened cable	No loosen required	Tighten the cable
Connection status of bus		Loosened bus screw	No loosen required	Tighten the bus screw
		Approaching to compressed bus	Adequate gap	Correction
LED Display	MS LED	Check green lighting	Lighting (Light-out or red is abnormal)	Refer to appendix
	NS LED	Check green lighting	Lighting, blinkling (Light-out or red is abnormal)	
	7-Segmenr (G4L-DUEA)	Check station lighting	Except station lighting is abnormal	

7.3.2 Periodic Checking

Please check 1~2 times per half year with following itmes and perform corrective action.

[Table 7.3.2] Periodic check item

Check item		Check method	Decision point	Action
Circum. Environ.	Circum. Temp.	Measure with temp./humidity tester	0~55 ℃	Adjust it in accordance with general specification.(in case using inside control room will folllow its environ.)
	Circum. Hum.		5~95 %RH	
	Circum. Pollution	Detect corrosive Gas	No corrosive gas required	
Module status	Loose, Fluctuating	Shake communication module	Should be tightened Strongly	Tighten the screw
	Adhesing Dust,foreign particle	Visual inspection	No adhesing required	
Connection status	Loosed terminal screw	Tighten by driver	No loosing is required	Tightening
	Approaching compressing screw	Visual inspection	Should be adequate Gap	Adjusting
	Loosed connector	Visual inspection	No loosing is required	Tightening connector' s fixing screw
Check Power & Voltage		Check the voltage between terminals, AC110/220V	AC 85 ~ 132V AC 170 ~ 264V	Change supplying power